R. v.73 June 1925 - June 1920

The AMERICAN RIFLEMAN

The Publication of the National Rifle Association of America

Entered as second-class matter, April 1, 1908, at the Postoffice at Washington, D. C., under Act of Congress of March 3, 1879

Vol. LXXIII, No. 1

WASHINGTON, D. C., JUNE 1, 1925

\$3.00 a Year. 20 Cents a Copy

The "Fourth" at Sea Girt

By Al Blanco

HE fourth of July will be celebrated at Sea Girt this year as usual by the members of the small bore clan in a manner entirely befitting the occasion. There will be shooting all day but no blanks will be used as is usual in celebrations at this time. But the fourth of July this year at Sea Girt serves a double purpose because it is the fourth day of the Fourth Annual Eastern Small Bore Championship Competitions.

Every small-borer already knows the Fourth comes on Saturday this year and that means, of course, that nobody plans any business on Friday which means the bulk of the shooting will be done this year on Friday, Saturday, and Sunday without loss of time from business which is a big thing from the standpoint of time in the life of the shooter who plans an annual trip to Camp Perry. Still we may expect every small bore shooter from far and near to arrive either Tuesday or early Wednesday morning, the first day of the shoot. They will come in their Henrys. Lizzies, Fierce Sparrows, Phewics, Chewterbaccers, and what-nots for another glance, or a new glance perhaps, at the famous rifle range at "Sea Girt-on-Jersey-Coast" where sky and water meet and sea gulls dip and dive while rum runners ship and thrive.

And so, when the small-borer arrives at Sea Girt the first thing he does is to show off his new rifle with its homemade stock and new fangled semi-ecliptic adjustable, removable, and considerable cheek piece—this being a nice smooth comfortable place for the jaw to rest when the face is in place.

"Yes, I sat up all night to finish the durn thing, and as you can see the shellac is barely dry." And, then, almost before you know it along comes another bird with a "Skeeterson-Chinbuster-Whosit"—with the latest thing in scope blocks and positive adjustment and Oh! Boy!—the barrel—"'djever see anything prettier?" "No! Haven't fired it yet but she'll put 'em all in the ring if you'll hold her right tight," and so it goes. Yes, all this actually takes place every summer at Sea Girt, New Jersey, where the small bore clan gets together for their annual championships.

This year the dates are July 1 to 5 inclusive, which means from Wednesday to Sunday; but lots of the boys begin to arrive on Sunday with the purpose of making a full week of it because it is part of their annual vacation, and where can a rifleman enjoy himself better than in the company of a hundred or more brother shooters? Why, it is worth the trip alone just to talk to Harry Pope, or to listen to the veteran rifle maker reminisce and tell some of his experiments even before Franklin Mann had built his 200 yard covered range up around Milford, Massachusetts. To talk to Harry Pope about experiments with rifles and car-

tridges, reloading, bullets, rifling, etc. is to appreciate his wide and deep knowledge of this subject covering as it does a great many years of practical and experimental work. There is, perhaps, no man in the country today who has covered so much ground and after you've soaked up some of this dope you wonder if there is "anything new under the sun."

If you tire of talking rifles or ammunitions, meet Mr. Fecker of Cleveland, the noted telescope maker, who is admitted to be the leader in this field. Mr. Fecker will give you the dope about telescopes and it is good dope too. Few know the rifle scope as he does.

And, of course, there are many important figures in rifle shooting who come to Sea Girt; men who have played the game too. Meet two of the past Presidents of the N. R. A., General Spencer and Colonel Libbey. You will also observe here and there men who have made their mark in military rifle shooting. There is Major Casey, for instance, Captain Richard, and others. And this year another famous shot of bygone Schuetzen and military days, Colonel Tewes, who has come back into the shooting game.

Of course, the civilians predominate and among these will be found many of the prominent shooters of the South, West, and East. It is because of the class and the character of the competitors that the matches take the name of "Eastern Small Bore Championships." Practically all of the shooters are from the East and the shooting, it is hardly necessary to add, is of a very high order. What I mean to say is that the competition is keen. It takes real marksmanship to win any of these matches.

There are three classes—the sure enough experts like Mc-Garity, Everett, Gillies, Wood, Hession, Neary, Charlie Johnson, Landis, Coons, Liezear, Gussman, et als. The middle class is composed of those men who have shot in at least one competition at Sea Girt, Camp Perry, or the Metropolitan Championships. Class "C" is made up entirely of the fellows who have never played anywhere but in their own backvard. This is the type of shooter wanted at Sea Girt for he is the backbone of the game and provides good competition. Unless he is encouraged he will always be a home range shooter. He would not come to Sea Girt if he knew that he was in select company. He might say, "What's the use, I'm outclassed ". But if he knows he can compete in his own class and yet perhaps shoot well enough to win in a higher class he may come and find himself. In this way, it will be possible to discover, encourage, and develop a large number of shooters who would otherwise remain hidden (Concluded on page 18)

sh

iz

re

ta

SC

ig

va

Pr

A

th

pr

sp

th

w

cu

rai

vo

co

pre

un

ou

ou

ou

vit

fol

Ho

wit

gro

Bunk and Ballistics

By Kenneth F. Lee

R VER listen to Mr. Average Sporting Goods Salesman selling The Novice a rifle to use on deer, bear and whiffenspoofs? His chatter sounds like this: "Certainly, Sir! I know the bullet looks small, but it travels at the terrific velocity of 3.000 feet per second, and strikes a blow of umpty-steen foot pounds, plenty of power for lions, leopards and Kadiak bear.'

As the salesman has probably hunted all over Jersey City, of course he knows all about it-maybe? And as nothing in his little book says anything about results on game-all he has got to talk about is paper ballistics-and these are not even distant relatives of game

The hi-power bug bit me-bit me good an' sufficient. In fact, it took three .22 hi-powers to convince me that, for me at least, the widely advertised imp was no fit gun for deer an' black bear. None of them would hold a six inch group at a hundred, although I shot 'em over a sand bag and used all kinds of loads and sights.

I killed a few deer with the imp, and lost a few more. Then a black bear, wide as an office safe-and twice as agile, stood up on his hind legs and offered me a fair shot, which I took. The small pellet landed right under his vest pocket and he came down with a grunt-started down hill hell-bent and with his cut-out wide open. Three more placed shots failed to slow him up-and to the best of my knowledge and belief he's goin' yet.

So then I relegated the .22's to the gun cabinet and bought me a pair of .250's, a lever and a bolt gun. I put in a week reading Chas. Cottar's African Bed-Time Stories-an' went up river with my bolt action .250 after whitetails. A fine doe was incautious one afternoon and gave me a standing shot at seventy yards or so, and I smacked one of those 3,000 foot pellets on to Mademoiselle Deer's left shoulder. She gave me the surprise of my life by turning about and coming for me, twenty feet to the jump. That deer ran past within a dozen feet, and went fully a hundred yards before she dropped.

The bullet landed where I wanted it to land, and went through the left shoulder a trifle high, emerging ahead of the point of impact and not mushrooming at all. If that cock-eyed doe had been one of Charley Cottars' pet lions-or even a bush-buck, she'd probably have plum' ruined me. Mind you, I'm not saying that the .250 will not mushroom on bone, or that it won't kill deer, for it will. But me, I'll pick something different when I go annoyin' African man-eaters, I'll tole you those!

Next I invested in a Remington bolt-action .30-'06. In it I used all the factory loads obtainable, ranging from the service 150 grain stuff up to the Western 220-and back to

the Remington 110 grain windsplitters. Here was a gun of fine accuracy, with the best set of factory sights ever put on a hunting armbut was I satisfied with it-certainly not!

In my short but interesting career it has been my fortune to hunt deer a lot-but I never took a real dislike to 'em. It seems like carrying a joke too far, to use a .30-'06 on a deer. The gun and load would be better adapted for use on wild switch-engines.

Of course, if a man really enjoys making his winter's supply of hamburg and mincemeat in the woods-well and good. He can do it with the .30-'06-no trouble at all. For example, once I shot a small buck with the Western 180 grain load. He was headed west, and the bullet landed on his eastern exposure. swamped a state highway through the deer. emerged at the base of the neck, cut down and split up a small spruce twenty yards further on, gouged a hole in a big granite boulder, then got up and went screeching off lookin' for other worlds to conquer.

That's no way for a bullet to act! If I was forced to hunt in a country where folks used those loads as a steady diet I should carry a portable, well lined with armorplate -and crawl hastily into it at the first indication of trouble.

Dam-it-all! When a man gets to ramblin' bout guns he doesn't know where to head in. What I intended to convey in this article was that paper ballistics are not even distant cousins to game results-an' don't never let no-one tell you different!

Ten years of guiding hunting parties have convinced me that bullet diameter has a lot more to do with game fatality than it gets credit for-a darn sight more'n velocity, anyhow! For a bullet that sneaks in between a deer's short rib and meanders on out through the far side and burrows savagely six or eight feet into the adjoining ridge is wasting energy and should be quite severely reprimanded.

Know what I'm using for deer this fall? A .38-40! Not with the new hi-speed loads, Oh sure! I know that it isn't a either! modern load-that it is much like throwing rock at 200 yards and up, and that nobody buys 'em any more. But say, did you ever get hit with a rock? No! Well, my advice to you is-Don't!

In my state a man is entitled to kill two deer every fall, and for the past ten years I have done so-yes indeed! With everything from a .22 long rifle to a .45 Colt automatic -which by the way will flatten a deer just twice as sudden as the best .22 hi-power that Mr. Savage ever made, although it only has about one-fourth as much "paper punch."

White-tails, in Maine, are seldom shot at more than a hundred yards range-because? Why, you can't see that far in good deer country. And if you think a .38-40 won't plum' ruin a big buck at that distance-just toss one up where I can get a crack at him!

My pet deer gun is a '92 model, with a Lyman on behind and a flat-topped bar and a silver bead on the prow. It is light, has a half-magazine and shotgun butt, and will nip off a biddy's head real pretty. 'Most anyone in this part of Maine will tell you that it is balanced 'bout right for snapshootin', too, for I've done exhibition work with it all over

It wouldn't suit you-but, doggone it, you aren't using it! That bullet will wade through light brush in a most surprisin' way, and I can wallop two apples at a time in the air with it, so the deer really hasn't quite all the best of it. It functions smoothly, and won't ruin a fine buck as the '06 seems to.

Lastly, I like it-can shoot it, and it goes upriver with me when the leaves turn, while a lot of expensive hi-powers stay right in the gun cabinet at home, with their crowned noses stuck right up.

With an insight amounting almost to clairvoyance I forsee a large, vociferous howl emanating from the hi-power clan all over North America if this article ever gets past the waste

Imagine anyone in his right mind advocating the use of an obsolete load like the .38-40 on deer and black bear! The nerve of some people! etc. etc. ad infinitum, and then some.

Listen, Brother Hi-Power! If a buck deer, or a doe deer, or a runty black bear-or an' Ol' He Black BEAR, could read English as well as us folks-doubtless the very first thing he, she or it would do on being hit by a bullet would be to run right off and scan Charley Newton's li'l red book on ballistics.

An' n'en, if he, she or it found out that the before-mentioned bullet had a paper wallop of a coupla tons or so, said game critter would curl right up there and die, demise, pass outand become eternally and completely defunct.

But within the scope of my wide and varied experience there has been no single instance of any of the previously referred to critters being able to read at all-not even Esperanto. So it seems essential to hit 'em with somethin' large and chunky enough to make an immediate and lasting impression, without reference to any book or books on the subject of muzzle

My .38-40 will do it. Any .38-40 will do it . and if you sink just one (count 'em!) of those soft-nosed slugs in a vital part of any game critter's domestic economy it will upset his internal revenue. . . . No kiddin'! He may recover, but I'll bet my best new Heiser holster against a peck of since the war Lugers that he will never be the same.

Bet I'll get as many this fall as you do, Brother Hi-Power.

Good hunting!

ist

a

nip

ne

ver

ou

igh

I

air he

n't

oes

ile

he

ses

ir-

m-

rth

ing

on

me

ne.

er.

an'

ing

llet

lev

the

uld

t---

act.

ied

nce

ers

ito. nin'

ne-

nce

zzle

o it

n!)

of

will

in'!

new

war

do.

Science vs. Philosophy

Criticism of Philosophy Applied to Ballistics

By E. E. Dittbrenner

HE title above would indicate that there exists a valid distinction between philosophy and the natural sciences. There need be, and such seems actually to be the case, both in fact and in the modern conception of the two branches of science. Philosophy is a reasoned science, whereas physical science is an experimental one. The former bases itself on the precepts of the mind; the latter on the evidence which nature presents to us of the laws under which she operates. As a general rule, any theorizing on physical science, which bases itself on pure reason, no matter how logical that reasoning, sooner or later brings conclusions which are fallacious in the light of actual occurrances. The distinction between the two is a valid one, especially in the more elementary concepts of the physical and mental sciences. The philosopher, directing his attention to physical science, in the realm of which lies the study of ballistics, may not ignore its facts any more than he does reason. In the last analysis, any theory or logic which does not accord with all pertinent facts, isn't reasonable, is it?

The foregoing may seem somewhat irrelevant, but the writer wishes to make the distinction as pertinent in the following criticism of the article entitled, "Attitude of Rifle Projectiles During Flight" which appeared in the December fifteenth issue of THE AMERICAN RIFLEMAN, to which the editors invited criticism. In justice to Mr. Tindall, the writer of the above mentioned article, the present writer has at various times taken the space necessary to state his understanding of the theory under discussion, which, due to the different point of view, may differ from what it was intended to convey. This will permit correction of any errors of assumption on the part of the writer, and confine the discussion so far as possible to matters of fact rather than opinion.

In studying physical conditions and physical science, we will find that the most important single item in the solution of problems involving forces is the correct analysis of their magnitude and direction. In order to accomplish this analysis, the conditions of the problem must be correctly stated and clearly understood; we must also be consistent in our use of the laws governing them throughout the solution of a problem, in order that our final conclusions may be valid. This is

The writer is not an "ordnance expert". either in fact or fancy; and he has been careful to point out where any statement in the following discussion is that of fact or opinion. However, he wishes to point out here: that with the experimental data of the proving ground available, the correct analysis of the "attitude of projectile during flight" is as much, or more, available to the physicist or student of natural science, as to the "ordnance expert", either of them, moreover, must consider all of the facts, and be consistent. With the foregoing in mind, the writer attempts to set forth his criticism so that the reader himself may judge of its worth.

If we pass over the matter in the article under discussion, prior to Mr. Tindall's ex-

sides of the bore and the breech mechanism; friction of the projectile on the sides of the bore and the lands; the force which the lands must exert on the bullet to rotate it: the motion of the rifle as a whole during the passage of the bullet through the bore, particularly at the time of exit. Most of these forces are large. but for any given rifle, or any number of rifles made in the same form and of the same properties, they will affect the barrel in



planation of the conditions shown in his the same way each time. If they do not, figure 6, as not particularly important to this discussion, suppose we analyze his assumptions relative to that figure. Mr. Tindall infers that the line of sight is coincident with the line of fire. The position of the bullet to the left of the line of fire (or plane of fire) he ascribes to left drift, for, he says, the "flip" of the barrel, to which this has been ascribed by "ordnance experts", is a mechanical incident, and will vary greatly under different conditions. It is a known fact that the flight of the bullet from the service rifle as issued. to the left of the line of sight, is always a uniform and constant quantity with the standard 150 grain bullet and standard charge of powder. The Springfield Arsenal took advantage of this fact for years, and perhaps still does, in zeroing the sights of the rifle in the vertical plane by means of a bore sight. Perhaps this fact confused the plane of fire and the line of sight with Mr. Tindall. If, as we know, the bullet passes from the left of the line of sight to the right of that line, at 500 yards, the writer wishes to point out what must be evident: that if the first cause of the bullets position on the left of the "plane of fire" is due to left drift, then before it can cross the "plane of fire" again it must drift to the right before it can cross. This point is not made clear by Mr. Tindall; in fact, it appears to the writer that Mr. Tindall assumes a left drift all the way to the 500 yard range where the bullet crosses the "plane of fire". Obviously this cannot be, or the bullet would be further away from the "plane of fire" at 500 yards than at midrange.

It is not necessary for the inspection of his theory to admit or deny the assumptions shown in his Figure 6, but for the sake of its bearing on the subject, the writer inserts a brief statement of the forces acting on the barrel, with the reasons for maintaining the theory of "barrel flip". Briefly, we have forces acting of the barrel due to: pressure of the powder gases on the base of the bullet, the then the rifle cannot be accurate. Would you call this a mechanical incident? If you now use a different cartridge in this rifle, its effect on the barrel, especially a long thin barrel, is quite different; the "drift" of the bullet is quite as much so and cannot be explained by Mr. Tindall's conception of drift, since the deviation for the group of the first cartridge is apt to be vertical as well as horizontal. This is a matter of fact, and not opinion. So many experimenters have pointed this out and proved it, that present day manufacturers are devoting considerable attention to so designing their barrels that a variety of loads can be fired from the same gun without change in lateral sight adjustment. Particularly is this true of the Ross,-and more especially of the "tailor made" gun makers. It appears that this "flip" of the barrel is not at all a caprice, but a fundamental condition of opera-

Mr. Tindall bases his theory of drift on his analysis of the forces which cause a sphere to drift during flight. His conclusions as to these forces are apparently drawn from the conditions depicted in his Figure 7, which shows a "bird's-eye" view (apparently a plan view-looking from the top down) of a sphere in flight, which we may conceive to have been discharged from a smooth bored arm. The writer does not know whether the theory is one which attempts to explain a fact or whether it is philosophical in its nature. If the latter, it might be of interest to attempt to follow the premises to a logical conclusion, in view of what follows.

To follow the steps from the premises to the final conclusions, and make the various steps somewhat easier, suppose we turn to Figure 1-Da, immediately below Figure 7. Let us assume that this sphere has only one motion,-that of progression. A moment's reflection should convince you that the resistance the sphere will encounter in its forward progress will consist only of the resistance of

Ju

st

th

Si

th

he

an

ha

he

lo

(i

to

of

bt

th

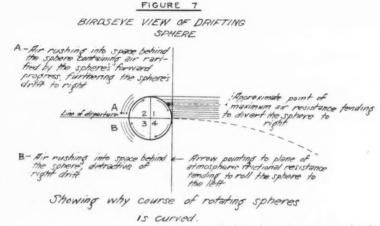
na

fr

th

lo

de





FRUITE 7-D

the atmosphere—this pressure is due to the forward motion of the sphere. Further, with a perfect sphere (which we assume for the purpose of this illustration) the resistance will be exactly the same on each side of the plane of fire, and in the same direction. Is there any reason why it should not be? Will there be any drift under these conditions? It hardly seems plausible.

Now examine figure 7 again, showing a sphere having two motions, that of rotation and of progression. We will agree that it is reasonable to assume there will be some resistance to the rotation of the sphere as well as to its forward movement. It is eminently reasonable to assume that the forward movement of the sphere must move the air out of its path. Before it accomplishes this, because of the inertia of the air, it compresses the air in front of it, which in turn exerts the same pressure on the surface of the sphere that the sphere imparts to it. No doubt, the greater the forward velocity of the sphere, the greater the compression of air, and the greater the pressure on the surface of the sphere which lies in the direction of motion; and presumably, the more resistance the air will offer to rotation as well as translation, if we base our argument on other known conditions. If we assume that as reasonable, (and Mr. Tindall makes the same assumption later on) then the greater the pressure on the surface of the sphere, the greater the resistance to rotation, as has been said. Now what direction does this resistance to rotation take?

It is pertinent here to point out that we must distinguish between the action of the sphere on the air, and that of the air on the sphere. They are equal, it is true, but in opposite directions. We have indicated the action of the sphere on the air; let us now see what action the air has on the sphere. Obviously, if the air is to retard the rotation

of the sphere, it must act in the opposite direction to that in which the surface of the sphere is moving. Note, then, that the action of the air on the sphere in the upper right hand quadrant is to move the sphere to the left of the plane fire, as shown by the arrow at that part of the surface, in Figure 7-Db. Examine the lower right hand quadrant in the same way. The sphere is still moving forward, and obviously, the lower right hand quadrant has the same forward velocity as the upper right hand quadrant. Since the resistance of the atmosphere is a function of its forward velocity, the pressure action on this quadrant is the same as that in the upper quadrant. If it is not so, then we must admit that our first assumption was incorrect. If we regard friction only, what does the rotation of the sphere effect? The passage of the air past the upper right hand quadrant will tend to turn the sphere to the left; conversely, in the lower right hand quadrant, to the right. The rotation of the sphere does not retard the forward

Actually, Mr. Tindall has considered the pressure due to the forward movement to the sphere as equally distributed over the forward half of the sphere; and that air is an ideal gas, without viscosity (internal friction) with only mass and inertia as its physical properties. This is not the case—for air is not an ideal gas by any means. Photography indicates the pressure waves are distributed as shown in Figure 7-Db, so that the actual conditions appear much simpler than the case assumed in Figure 7. The writer leaves to the reader to assume what direction the sphere will drift due to friction under those conditions.

It is necessary, however, to point out that the foregoing analysis does not consider the effect of gravity nor the effect on the rotation of the sphere due to gravitation. It would be fallacious to attempt to settle the argument without considering them. The forces acting in the rear of the sphere would undoubtedly be as Mr. Tindall assumes, so we will give no attention to the matter here.

Summing up briefly, it appears to the writer that Mr. Tindall wishes to show that the rotation of a circular surface induces pressures which tend to force the projectile out of the plane of fire in the direction of rotation at the point of greatest pressure. He applies this theory to the spitzer bullet under conditions shown in his Figures 9 and 10, saying that the spitzer bullet is only a modified cylinder. Apparently the fact that the bullet is pointed does not affect its action! He concludes that the pointed bullet drifts to the left under the conditions he shows. It probably would if those were the conditions in actual practice, but they are not, as will be shown later. Herein lies the error in the argument-a disregard of experimental evidence.

Incidently, it is pertinent to point out that

FIGURE 9

Cross section of projectile drifting Longifudinal section of projectile drifting to the left.

(Point of greatest air. friction on lower right quadrant Trijector.

The departure Paint of greatest air friction of lower right quadrant.

Showing cause of drift to left

velocity of one half over the other.-the pressures should still be the same in either quadrant. We have assumed that the frictional resistance to rotation is a function of the speed of the surface, as has Mr. Tindall, relative to the air. The rotation of the sphere now increases the friction in the upper quadrant and decreases it in the lower right hand quadrant, so that the summation of frictional resistance results in a greater force acting to the left of the plane of fire than we had in the case of the non-rotating sphere. This friction communicated to the sphere as a whole, would form a reaction sending it in the opposite direction to that indicated by Mr. Tindall. Any further analysis which considers only the friction between the surface of the sphere and the air will lead to the same results, especially if we take the assumption depicted in Figure 7 as accurate.

the relations shown in his Figure 10 cannot be attained in actual practice.—the trajectory cannot cross the line of departure, it must be below. The trajectory will also pass through the center of gravity of the bullet, and not through the tail end. It is pointed out here because Mr. Tindall seems to base the rest of his conclusions upon the conditions he shows here.

From his analysis of the conditions shown in Figure 7. Mr. Tindall concludes the spitzer bullet shown in Figure 9 drifts to the left, as before stated. This condition, he says, holds good up to 500 yards, if the sights are set for that range. He makes no explanation of the effect the sight setting has on the drift, unless he means that we are to limit our horizontal range to that distance. Apparently we are to understand that this condition holds with the service rifle only up to about 500 yards, for

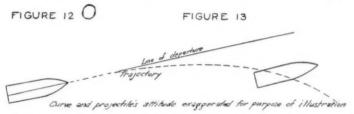
e

note that in Figure 13 he appears to show the trajectory from the muzzle to a range of 500 yards. His purpose there is to show that sometimes, at 450 yards or less, the bullet strikes the target in the position shown, with the long axis vertically inclined. But, he says, it is not necessary for the vindication of his theory to show or assert that position of the projectile. Why not? And why does not the bullet always strike the target at "450 yards or less" in the same position, as he admits it does not? It appears to the writer that it is

curs in the same direction. Conversely, if the force on top of the bullet is greater than on the bottom on the base of the bullet, what keeps the base of the bullet from falling below its original angle? A thorough analysis must account for all forces acting, and the source of those forces. So far as the writer has been able to see, these forces have not been accounted for; nor, as a matter of fact, are there any such in existence if our physical science has any foundation at all. Obviously, if the bullet rose in its flight, as he (Mr.

texts as Grey's "Physics" give an elementary treatise wherein it is assumed that the student is familiar with the principles of mechanics and with calculus. The ordinary college text on physics sometimes explains what happens, but not why. The principles which govern the motion of the top, are the same as those which govern the movement of the earth—it is probably a subject under celestial mechanics. Since the earth has seven different distinct movements, not all of them steady, the reader can appreciate why the writer is not willing to go into detail.

In a general way, some explanation may be made of the principles governing the rotation of the top, and the resultant action of the same. It is primarily a state of inertia which govern this action,—that, and the force of gravity. Inertia is defined as that property, possessed by all matter, which resists any change in its state, whether that state be of rest or of motion. For instance: a paving block possesses inertia. Improperly shod, a swiftly moving foot coming into contact with one lying loose will suffer severely, for it (the foot) must overcome the inertia



important to show that the attitude of the projectile is always the same in order to show that that attitude has any relation to conditions such as his so-called "left drift" up to five hundred yards, which is always the same. Notice also, that in Figure 13, the bullet appears with its axis substantially parallel to the line of departure and below it-in contrast to his Figure 10. This is as it should be. Bear in mind that right drift has taken the ascendency over left drift at 450 yards, if you agree that the drift is to the left at the beginning, for the bullet approaches the line of sight after the 300 yard range, as Mr. Tindall makes clear. And this right drift was taking place, as he points out, while the bullet was in the position he shows in Figures 10 and 13, from which he concludes that the drift is to Obviously, something is lacking here!

He further contends that the right drift begins at about the five hundred yard range, and continues, until at 3,100 yards (the maximum range for which the table he uses has any data) it is about ten feet. Being consistent with his conclusion from Figure 7, he ascribes this right drift to the fact that at long ranges, the pressure is greatest on the top of the bullet, due to its rise! Especially the "curvilinear rise of the base of the bullet" (italics are the writer's). Note again the point made between conclusions arrived at by pure reason and those derived from experiment.

If the base of the bullet always rises "curvilinearly" or otherwise, into the trajectory, (and he assumes this is always the case) it requires a force on the base of the bullet from below to make that bullet rise. If the force acting below causes a rise of the base of the bullet, then the force on the top of the bullet must be less than that below to permit the base to rise. In that case, the predominant force is acting on the lower surface, and from his own argument of cause and effect, the drift should be to the left; he now says it is to the right! The writer is not overlooking occasional eccentric impulses of powder gases but we cannot consider this force as such, for Mr. Tindall tells us it always ocwith one lying loose will suffe for it (the foot) must overcome

FIGURE 15

Tindall) assumes, such a statement, considering air as a perfectly ideal gas, might have some basis. But what causes the bullet to rise? Here indeed is an important ommission—it does not appear to the writer as being so obvious as to require no explanation, yet no reason is given for the "rise" of the bullet as he shows in his Figure 14. We will come back to this later.

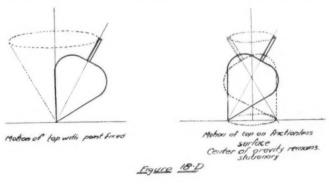
Early in his thesis, Mr. Tindall indicated

that the gyratory effect of the rotation of the bullet kept it point on due to the same causes that keep a top upright on its peg, "namely that as fast as any part of it tends to fall that part is instantaneously turned away so that it is on its upper side, and this continues so long as the projectile revolves with sufficient rapidity to keep

gravity from acting dominantly on any separate point of it"! It is hard for the writer to decide whether or not the fallacy of such an explanation is obvious to the reader. In spite of a number of years spent in the study and use of physical science, the writer would consider himself fortunate indeed to explain to a non-technical audience, in so few words, the forces which cause a top to act as they do; indeed, if he were able to do so at all. Such advanced

of the block at rest, or else be retarded by the inertia of the block.

We must consider here, too, that the toot, by virtue of its motion, has also acquired inertia and tends to maintain its movement unless it is stopped by some means. If the block is heavy enough, the foot is stopped. If the block moves, both foot and block move forward at the same velocity, but a lesser one than the foot had prior to contact



with the block. In either case it will suffer. So with the top. It is spinning, and its axis is inclined. From experience we know that a non-rotating body in that position will fall. The spinning top, however, does not. Its axes moves in circular manner and forms a cone in space if the point be fixed,—the point being the apex of the cone and the top of the peg forming the outline of the base. If the point revolves on a frictionless surface, the axis of the top forms two cones in space, both

Ju

til

ro

ev

be

to

de

or

it

tic

W

di

tie

tic

by

re

of

th

re

no

th

fa

of

to

sp

co

to

fli

th

wl

sit

gr

th

si

bu

ar

be

pe

ha

re

21

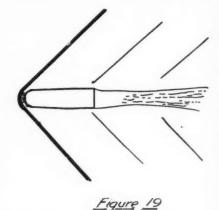
di

th

on the same center and both conical axes vertical, the point where they meet being the center of gravity of the top, also the apex of both cones, so that the point of the top describes the base of one cone and the top of the peg the base of the other cone. Figure 18-D. This circular motion of the axis of the top is the precession referred to by Mr. Tindall. If the forces acting on the top are unsteady, the motion of the top becomes jerky, and the figure described by the peg of the top is not a true circle. We then have nutation (nodding) in addition to precession in the motion of the top. Observe then, that the effect of a force applied to a spinning top is to change the direction of the axis of rotation without reducing the speed of rotation. And this change in direction is always at right angles to the force acting. If the force be steady (as is gravity) a continued application, due to the point of the top being fixed, sends the axis around in precession, the direction of this precession being dependent upon direction of rotation.

The actual action of the bullet in flight will vary somewhat between the two conditions of a spinning top shown in Fig. 18-D. before remarked, we can conceive of no force which would send the bullet above its line of departure in the normal flight of the bullet.

We know from experience that if we throw a ball some distance, we must throw it quite high in the air or the ball falls to the ground before it reaches its objective. We probably do not recall our first observation of this fact -it seems instinctive to allow for it when we throw. If we get on top of a high building or a cliff we can throw little farther out, but the ball goes to ground as usual-we have simply taken advantage of the fact that the ball takes a longer time to fall from the top of the building than before, and the forward motion acts for a longer period of time; hence we have thrown a little farther. So with a bullet. Gravity brings a bullet down just as quick (neglecting differences of air friction) as it does an object which has been dropped from the same height. The weight of the object has nothing to do with the speed of vertical drop which gravity imparts to falling objectsgravity acts equally on every particle; the more particles, the greater the weight. That is why a large piece of iron weighs more than a small piece. FIGURE 14

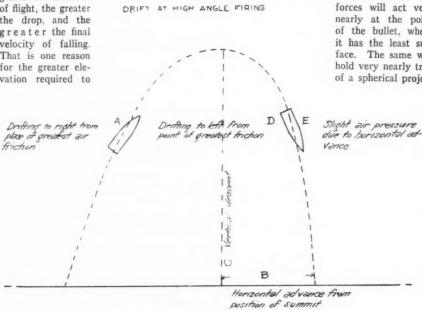


attain greater ranges, and for the greater proportionate drift at long ranges. It is hardly necessary to point out that the fact that the bullet drops from the time it leaves the muzzle disposes of the theory advanced by Mr. Tindall even if it were developed consistently.

So far, neither the writer nor Mr. Tindall have remarked upon the actual circumstances surrounding the bullet during flight. Mr. Tindall has remarked upon several things which could be shown by photography, some of which are doubtful of being attained—particularly photographs of bullets at greater ranges from the muzzle. The writer has in his possession at the present time, a number of copies of actual photographs taken of bullets in flight, near the muzzle of the arm from which they were discharged, line cuts of which are here presented for the consideration of the reader (See Figure 19.) The comparative compression and rarefaction are shown by the comparative weight of the lines and shadows. It will be seen that by far the greatest force on the bullet is applied directly on the point. Even taking into account the fact that the

not a vacuum, the resultant of all the forces will act very nearly at the point of the bullet, where it has the least surface. The same will hold very nearly true of a spherical projec-

volume bounded by the forward heavy line is FIGURE 16



e pressure Increasing atmospheric pressure due to more rapid forward progress than rate of descent Increasing atmospheric lue to curvilinear-latera projectiles sing oir pressure here

Then if we assume a force on the bases of the bullet below, as does Mr. Tindall in Fig. 10 and 13, the base, instead of risign, moves to the left, and enters into a cycle of events which continually change the direction of the spinning axis. Probably this is the "complicated philosophical principle" he refers to in his opening paragraphs. There is nothing philosophical about it at all-it's a fact, and it can scarcely be deemed a complicated one. Do not confuse the theory with the fact .the theory may be complicated, but any child can observe the fact and tell you which way his top swings its axis. That is all that is necessary to do here-not apply the theory, but the fact, to the motion of the projectile.

Coming back to Mr. Tindall's explanation of his Figure 14, note that he says that the bullet induces a pressure on its upper surface because of its rise! He shows no line of departure for the projectiles in the figure; his statement seems to indicate that it is reline in the figure, i. e., that the bullet actually rises from the direction it assumes upon leaving the muzzle of the rifle. From a scientific point of view this has no more foundation than his explanation of the effect of spin on the projectile in flight. If the bullet starts out with its point above the trajectory as in Figure 13 with the maximum pressure below it, why does it not do so when fired at long ranges? We know that the rifle must be elevated to a greater angle to get greater range, and that its long axis does not emerge from the barrel in a horizontal position unless fired with the barrel horizontal. And as

Relative to the line of sight, the bullet rises during the first part of its flight-because it was discharged on a line of departure to allow for the drop of the bullet. Therefore the trajectory must always be below the line of departure, as has been pointed out. The bullet falls all the time it is in flight. It isn't a matter of opinion or for philosophical sophis-

try-it's a fact. The greater the duration of flight, the greater the drop, and the greater the final velocity of falling. That is one reason for the greater elevation required to

. 1

all

ces

in-

ch

of

es

ht,

ey

re

er

ag.

m-

It

ao

he

is

he

he

ry

int

ere

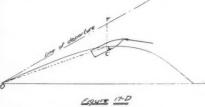
illi

ue

tile—note that the bullet shown in Figure 19 is round pointed, nearly spherical in form. However, it is well to point out that caution must be exercised in deriving conclusions from photographs of bullets in flight, where all conditions are not known.

It is left to the reader to judge of the theory advanced by Mr. Tindall so far. The writer does not deny that the sphere, if subjected only to rotation and progression under which it has been analyzed would drift in the direction indicated in Figure 7, but he affirms that if only forces of friction are acting, the drift would be in the opposite direction to that indicated. But we cannot disregard the properties of the air, the gyroscopic effects of rotation, nor the effects of gravity, even on a spherical projectile. Experiments performed by the writer in which the effect of gravity and precession on a sphere in flight were eliminated, show that the sphere actually does drift in the direction indicated by Mr. Tindall. The question then presents itself, what is the result when gravity acts to cause precession of the axis of rotation of a sphere in flight? It is of no importance here, except to indicate that it is unwise to base a theory on an incomplete analysis of something entirely different than the action the theory is to explain.

Turning now to the theory of drift which results at high angle fire, we note again that no explanation is made of how the point of the bullet gets below the trajectory in the "rising" portion of the trajectory, in Figure 16. Another very pertinent point neglected so far is this: that any resistance to the motion of the bullet acts opposite to the direction taken by the bullet in flight, and tangential to the trajectory. We can take apart, so to speak, the various motions of the bullet and



examine them by themselves, but we must consider their total combined result if we wish to get the direction of forces resisting the flight of the bullet. Since the resultant of these forces act so as to cause the bullet to go where it does, the reaction acts exactly opposite in direction. Therefore the resistance is greatest on the point of the bullet as long as the bullet moves point forward with any considerable velocity. So long as the point of the bullet and the center of gravity pass along and are coincident with the trajectory, there will be no upsetting forces on the bullet. This appears to the writer to be fundamental-and hardly to call for explanation. Obviously the velocity of the projectile along the trajectory is greater than any component of that velocity, regardless of the direction of that component and the forces on the bullet are greater in that direction. Since the trajectory is curved from the muzzle to the end of flight, the point of the bullet is almost immediately above the trajectory, and there results a force tending to upset the bullet as shown in Figure 17-D, the line of which acts tangentially to the trajectory, but does not pass through the center of gravity of the bullet.

If, as Mr. Tindall says, the bullet is almost wholly at the mercy of gravity at the summit of the trajectory curve in Figure 16, with the projectile in the position DE in that figure, what prevents the force which is acting below from overturning and causing erratic drift, if there be any at all? Likewise, if we consider that real point of application of the retarding forces—at the point. Has the bullet no longer any stability at the summit, due to rotation? Why, does the resistance act on the point of the bullet, as he says, at the summit of the trajectory curve where its downward velocity is greater than at any point previous (since it has taken longer to get there) and not on the ascending part of the trajectory?

The statement that left drift occurs when the projectile has a greater downward distance

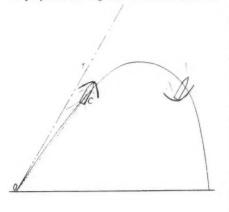


Figure 16-D

to travel than forward distance can hardly be more than pure assumption. While it is probably true in the case of fire at angles resulting in left drift the reader must bear in mind the limitations of ballistic formulas from which these relations are computed, especially for small arm firing at very high angles. Unless of very recent origin, no ballistic formula in existence has a factor which takes into consideration the angle of the rotating axis of the bullet, and for a very good reason. Empirical constants are resorted to-and their origin shows up in the computed range for unusual angles or ranges-the first I. D. R. the writer ever saw gave the range of the Springfield as somewhat over 5,600 yards at maximum elevation! Computed from formulas with ballistic constants determined at short range firing no doubt. Does it shoot that far? Not from actual test. Therefore the writer would accept advisedly any assertions regarding the position of the summit of the trajectory with respect to the range at the angle of fire which first results in left drift.

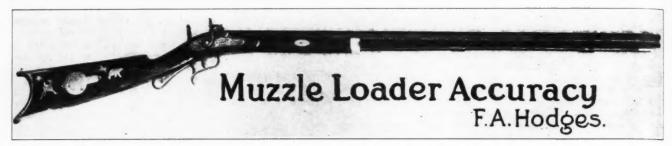
There are certain differences in the relationship of line of departure, trajectory and range, also inclination of projectile, when firing at very high angles of elevation which throw considerable light on the causes of left drift.

Whether or not Colonel Ingalls explained these points in the article referred to by Mr. Tindall, the writer is unable to state; but briefly: the line of departure and trajectory remain closer together in high angle fire, as shown in Figure 16-D. Note that the distance from the line of departure (TC in both 16-D and 17-D) determine the location of any point on the trajectory. This distance (neglecting air friction) is a function of time only. That is to say, if the bullet in Figure 16-D has been in flight for the same length of time as that shown in Figure 17-D, the length of the line TC will be the same in both cases, regardless of their respective velocities. The forces acting to upset the bullet will be proportionately smaller in high angle fire, since the angle TOC in that case is smaller than in Figure 17-D which shows a case of low angle fire. It follows as well that the drift to the right during this flight of the bullet will be less than from a bullet fired at a much lower angle which has been in flight the same length of time, and which has the same rotation, for drift is a function of time, among other things.

It seems obvious that the bullet reaches the summit of the trajectory curve with great enough stability to maintain its angular attitude very nearly parallel the line of departure in the case of high angle fire, for the upsetting forces have not been so great as in low angle fire up to that time, for more reasons than simply those given above (among them: decrease in the density of the air, slower progressive movement along the trajectory and its resultant precessional effect on the bullet.) As the bullet descends on the trajectory curve, it comes down base forward; and since the application of the upsetting force is now in the rear of the center of gravity, the direction of rotation remaining the same, the drift is to the left instead of to the right. The "head" waves of air pressure are indicated in the two positions in Figure 16-D. We can conceive of this taking place without changing our present theory of drift; in fact, it fits in perfectly with that theory and substantiates it beyond a reasonable doubt.

The writer has touched only upon the major errors of assumption in the article under discussion. To controvert all of them would demand entirely too much space, but he has endeavored to outline the physical principles from which the further examination of that article may be made. It has been the aim to keep this paper free from technical terminology which only a philologist would understand without reference, and which is at best ambiguous to the nontechnical reader to whom this magazine makes its greatest appeal. If the reader feels disappointed that no full explanation has been made of the actual causes of drift as we understand them, it is hoped he will realize that the proper presentation of this subject cannot be made in conjunction with a criticism of another without sacrificing clarity and space which may be more valuable for some other item-not everybody cares about the technical side of ballistics.

In conclusion, the writer wishes to express his appreciation to (Concluded on page 18)



EVER since I read Mr. Sawyer's book, "Our Rifles," and saw those targets made with the old type muzzle loading rifles with all the bullets cutting the same hole at twenty rods (110 yds.) I've been wondering. We don't very often hear of such groups made with pressure barrel Springfields or close chambered Niedners.

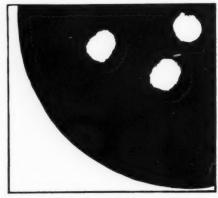
Always there has been at the back of my head a bit of skepticism on the subject of those "sure death" rifles carried by our grandfathers, those wonderfully accurate weapons such as Nat Foster and others used to drive nails at sixty paces and cut off partridge heads even further. I have listened and listened again to various "Grandpaps" tales of the wonderful shots at Barking Squirrels and of the one man (of which there was one in each community) who never missed. Generally while listening to these tales I would have the Springfield along and they would look rather witheringly at it as these wonderous accounts became more and more remarkable. One veteran recently said he would shoot his "Squirrel Rifle" against any of those 10-cent a shot rifles that we make so much of.

Anyway I became inoculated with muzzle loading baccilli and could not rest until I was the proud owner of a Squirrel Rifle. I wanted one that was as good as new so that I could prove for myself and for several of the most insistant old timers that as far as shooting against a Match Springfield, it simply wasn't done. Now it was one thing to say "I'll have one" and another thing to find it. All summer I inquired, searched, bothered friends and ruined my reputation as to sanity in the effort, without results. Always it would be "Oh yes. so and so has one—he lives over at so and so.' When I would arrive on the spot the story would be "Well we wouldn't sell the old rifleits the one Dad used" and usually it was an old rusty gun with a cracked stock and hammer and other parts gone. The fact was very apparent that every one of these old rifles had made a home for itself and was not to be had. We had about made up our minds that the only way we ever would get one in shooting order was to make it ourselves with some old tools and machinery that we have which belonged to one of the old gun makers, when I stumbled on to one right here in the city-

This old timer is a plain rifle of the times, just an ordinary old squirrel rifle, brass patch box, brass buttplate, brass trigger guard, a good lock, a good plain walnut half stock and a 31½-inch octagon barrel. The barrel—in fact the whole gun is in "as new" condition, not a spot in the interior. The rifling is not like any we ever before have seen. The bore

is simply ten sided, ten flat faces cut in a slow spiral twist, a regular .36 caliber "Decagon." The sights are open front and rear and a doll's head peep. The peep sight is unique. The head is about three-quarters inch in diameter on the principle of the Lyman disc, very small aperture. The head folds down when not in use and elevation is obtained by revolving the whole sight upon its stem, which is threaded with a very fine thread into the stock on the tang. I suppose so many turns—so many yards or rods. The outstanding feature of these old rifles is their hang or feel when one throws them up to shoot. There isn't any modern rifle that fits into position for me so nicely as do these old timers.

Our first trouble was bullets. We finally found a cherrie among the old tools that would



One and three thirty-seconds inch, five-shot group made with the Moore muzzle loader pictured above. Shot prone, with rest, on January 11, 1925. Load was a round ball (000 Buckshot) thin patch and fifty grains FFFG black powder. Range 100 yards.

cut a mold for the right sized .36 caliber round ball. Finally I happened to discover in the Winchester catalog that the 000 Buckshot is .36 caliber. Me for the gun store and right back with two pounds of nice round bullets just the right size. Then we used a 9 gauge wad cutter to make a supply of nice round thin patches, which were subsequently oiled with 3-in-1. For powder we had a can of F. F. G. Black. A box of caps and we were all set to find out for sure that those old rifles weren't to be compared to our modern ones as to shooting qualities.

Five shots in a string, then go look was our program. So after snapping a few caps by way of trial and to be sure that there was a hole through her, we poured 20 grains of powder down the old barrel, centered an oiled patch, shoved down a bullet and sat down to shoot. Right here I want to say that none of us are remarkably good shots, none of us are

gun authorities and we don't wish to convey the impression that we know a lot about guns, etc.. in fact I for one am just learning enough to know how much I don't know.

Well anyway we finally "touched her off," as the saying goes. Five times we did this, then went to look—holes all over the paper, no kick, not much noise, lots of smoke were all we could report. Then we did the same thing all over again with 30 grains of powder, holes closer together, more noise, more smoke. Then we put in 40 grains—holes all in black and much noise—50 grains of powder brought a clear ringing whip-like report, oodles of smoke, no kick and—the bullets all in the same hole. This at 25 yards shooting with as near a perfect rest as we could devise.

This of course is quite short range and the writer has shot quite a few rifles that would group in one hole at this range, one of which is a Match Springfield fixed up as a sporter. I am mentioning this .30-06 because with it I have done the best shooting of any rifle I ever owned to date (but one). Now out of several hundred trial groups fired from time to time with said Springfield, the best one I ever had measures 1 5-8 inches center to center at 100 yards (5 shots). This was with dead rest, hand loaded 220-grain Lubaloy bullets and No. 16 D. I. M. Powder. Of course we now had to try the old squirrel rifle at 100 yards. We fired several groups of five shots, had to adjust the sights and tap the front one over quite a ways for windage. The groups ran around two and a half inches. After quite a little banging and incidentally manual labor in loading, the sights seemed set O. K., so we got down on our blanket and settled down to brass tacks. Five shots held carefully as possible netted us a group of 1 3-32inch center to center. Better groups than Mr. Springfield or any other rifle had done for me (with one exception). Now I am not belittling our perfectly good old reliable Springfield, as it goes without saying that at ranges over 100 or 200 yards the old squirrel rifle would be like an air gun while the .30-06 would be just limbering up.

th

se

Rr

va

sh

is

he

per

tor

tal

me

Iv

sid

we.

am

Anyhow when some ancient guide or veteran hunter tells me about so and so—"I can remember when I was a boy, used to split a card"—well I'm just "laying low and ain't saying nothin."

Another thing that always bothered me about the stories we hear of the old time crack shots was the nail driving stunt as practiced at sixty paces. I've spent a lot of time wondering what kind of a nail could be seen at that distance, which is practically fifty yards. Some of the old time (Concluded on page 18)

igh

ff.

er.

ere

me

ler.

ght

of

tha

the

blu

ich

it

I

of

me

e I

ith

ul-

rse

100

ots.

one

ter

ual

Κ.

led

32-

Mr.

me lit-

ng-

ges

ifle

ran

me

ac-

me

The Lost Art of Wind Doping

By E. C. Crossman

HE strange adventures of our Palmer Team which invaded Canada last year and got licked as set forth in the September 15th 1924 canto of the rifleman's "Snappy Stories," brings once more to my mind grievous doubts as to whether we are not raising up a generation of rifle shooters who know as little about real wind doping as they know about religion.

For the first time in nearly a quarter century as I remember it, a hand-picked Yankee team has been trimmed by a hand-picked Canadian team over the Palma course. It came at the end of a string of victories for our international teams including the Dewar, and I think most of us were under the fixed impression that an American team—a rifle team if not a pistol team—was practically unheatable.

In this case it would appear that the Canucks caught us when we'd left our pet gun at home and the results were extremely regrettable.

The excellent story of Commander Wilson concerned itself more with the good time and treatment the boys had when they were not getting a deckle-edged licking, than with the ballistic end of the match. I take it, however, that both teams fired the British Short Lee-Enfield and Mark VII ammunition or some match modification thereof.

Doubtless Mr. Wilson felt that it is not good form to gossip about the beds, the morning sausage, the age of the strong waters served, or the rifles, furnished you by your host when on a visit to the country, but methinks that between the lines I read yet another story, the same being that as a rifle the British Short Lee-Enfield would make a good club.

Knowing this rifle quite well, through much personal trial and acquaintance with its ballistic possibilities, I should feel much surprised to find it holding the bull's-eye at 1,000 yards with any comforting margin between the shot group and the edge of the black. It offers little comfort to the man whose error of hold is worse than one minute or ten inches, unless he can arrange to have his hold errors compensate the rifle errors. Alas, it is more customary for said errors to team up and hand you something that makes the coach start talking religion to himself like the iceman the little girl heard drop the ice on his foot.

I do not know, not having talked with any member of the team, and not having seen the diagram of the shot groups made thereby, but I would bet that the elevation errors were considerable, outside of the wind influence laterally.

But, outside of the elevation errors of this weak sister of a rapid fire rifle and indifferent ammunition, the most amusing feature of the report of the shoot was the comment on the inability of the American shooters to keep up with the wind changes due to the indifferent wind jamming qualities of the bullet.

I imagine that those old timers who used to try to outguess the vagrant zephyrs with the old Krag will likewise find some amusement in the idea.

This is not for a moment to cast any asparagus, not to say ripe tomatoes or other vegetables, on the fine shots of the American team or on its coach. I have been licked by most of them too often to be the party to offer such criticism.

But it is still amusing to note how much part is played in our own extraordinary long range records by our high velocity, fine ammunition, when such a team as our Palmer gets trimmed the first time it goes into a match with such a rifle as the British Lee.

The amusing part is merely this: The British Mark VII cartridge fires a bullet of 174 grains, with the muzzle velocity of 2440 feet per second. The bullet is sharp pointed. Its trajectory over 1,000 yards, which naturally has an intimate relation to its time of flight and wind-jammer qualities, is 17.8 feet. Its elevation for 1,000 yards is about 62 minutes. Compare with the Krag, with its 1,000 yard trajectory of more than 28 feet as against 17.8 feet for the British cartridge, and its 1,000 yard elevation of about 96 minutes against 62.

Such a cartridge in the days of the Krag would have moved its owner to tears of downright joy, and he would have sneaked out the first long range match and hung it all over such sharks as Casey or Richard or Tewes.

For ten years there was no such ammunition even thought of for the Krag. It was during those years that our real old time wind-dopers were getting their education.

In 1907 we sent a team up to Canada for the Palma, armed with the good old Krag although the Springfield was then out, and with a batch of ammunition that put it all over the poor Canuck shooters. It was so much like the Mark VII British cartridge in ballistics, if not in accuracy, that the resemblance is amusing. With it, and the much inferior sights of the Krag as compared to the target sights used by our Palmer team, our team hung up a record that stood for many years of Springfield efforts to break it.

The Krag Hudson-Thomas bullet was heavier, 202 grains, if I remember correctly, and the velocity lower, but as a wind-jammer it was much in the class of the British Mark VII. It was doubtless more accurate.

Yet our team, firing ammunition of questionably superior wind-bucking ability to the old Krag ammunition, found much difficulty in keeping up with the wind changes, and didn't keep up with them so well as their Canadian friends as the scores seem to show.

Even the fact that the team had a real old

timer coaching it does not alter the facts. I doubt if Casey has sat behind ammunition as poor as the Mark VII since the year Mother Casey made him shave off his long grey whiskers, and even such a fine long range man as Casey is apt to forget in fifteen years or so what the wind will do to a bullet of these ancient ballistics.

I am afraid that as our ammunition gets better and better, our wind doping ability is going to fall off steadily.

The perfection of the boat tail with its undenied lessened sensitiveness to wind probably through reduced flight time, and the high velocity obtained with heavy bullets of perfect ballistic shape, have combined to let most any good holder who happens to get into the groove, win a long range match from the most skilled of the old time wind-dopers. The same man in the days of the Krag and under the same conditions would be busily and ruefully wondering why he kept hitting John Smith's target to the right of his own, when he wasn't hitting Bill Spivin's to the left.

Likewise the same sort of holding that is now good enough for a long string of consecutives, would in the days of the Krag see him the proud proprietor of a large flock of 6 and 12 o'clock fours. When your shot angle is using up about thirty inches of the bull, the care required of you is quite different from that asked when the ammunition is staying in fifteen inches. This just about represents the difference between the best of the Krag stuff, and the best of modern match ammunition save in the case of some such very special stuff as the Hudson-Thomas.

A great many parties are besporting gold medals won in long range matches of these days, when their same wind-doping knowledge and skill and experience in Krag days would have seen these gentlemen bragging about how they ran out eight three's before they got a two

The developments of our ballistic engineers have given to our riflemen what is getting to be pretty much a fool-proof cartridge so far as wind-doping is concerned. Not that such a bullet will ride through a gale that is removing the shingles from the roof of the Perry clubhouse, but it does ride through the little zephyrs that used to wreck Krag scores.

In these days you set your wind-gauge by your two sighters and then don't touch it until the wind blows your hat off, or your scope down three or four places along the firing line, or your bullet out for a close four.

In the old days you had a chill every time the faint mirage along the top of the figures flickered even a little on the most quiet of Perry or Sea Girt days. Because, the bullet of the old Kragy-wagsy would present you with a juicy three if somebody along the line even blew out his breath too hard.

Many a well intentioned and studious gent, versed in the traditions of the game, and deathly afraid of every little breezlet that gambols o'er the lea, works himself neatly in and out and in and out of the bull's-eye by a wind-gauge breeze he sets up by his continual diddling of the said wind-gauge.

It is an important fact for the beginner to remember—that while a little breeze may not move the bullet, it is a lead pipe cinch that moving the wind-gauge will move said bullet.

I have watched many a hapless wight fighting an awful hurricane he had set up by continual jiggling with the back-sight, when if he had kept his damn fingers off of it, the hurricane would have gone down like troubled waters with oil spread upon them.

Then there is the unfortunate gent who is always just one step out of time with the sequence of the events then transpiring.

He hooks a wide and juicy four through an unfortunate and unforseen puff of wind, whereupon he talks earnestly to himself and shoves the wind-gauge over two-thirds of a point to take him back into the center again.

In the mean time the breeze has gone down, and the wind-gauge change promptly moves his next shot out for a close four the other way. So this now somewhat peeved party takes a long earnest look through his glass, the wind-gauge back a third point, puts it down in his score book, growls to himself, and looses off the third shot. In the mean time the breeze has dropped entirely during the interim of this bird's book-keeping and silent prayer and he goes out for a still wider four the same way as the second one.

At this stage he abandons all the day's plans for winning the Wimbledon Cup, while the young and innocent Marine scorer moves his desk and his shocked self back out of earshot of this deprayed party.

At the end of the seance this party arises from his contemplation of his last three and informs the cock-eyed world that he'd like to see that deleted Springfield Armory turn out just one gun that was worth taking to a dog fight, also that shooting such junk as Remington called match ammunition was about the same thing as shooting feathers down the range and that the marker on that target spent his time alternating between attacks of the sleeping sickness and fiendish mis-marking of the shots on his paper.

So is the wrecking of another perfect day. I spent a goodly portion of my three odd years in the Army in ballistic work that was a liberal education along many lines, not the least being wind effect on bullets. The result of my observation persuaded me that monkeying with the wind-gauge of a rifle was much like the constant worrying back and forth of the tiller that so surely marks the amateur helmsman steering a boat. If you have ever watched such a party you will have noticed that the wake of this unfortunate craft strongly indicated that she must be an outcast from the rum fleet because of her dissolute habits. The pilot notes that she is several points off her course as laid down either by visual reference point or compass, so he

hastily puts the wheel over to correct the error.

The obedient craft swings her nose around in response to the helm, and presently is still farther off the other way from the true course. Then the performance is repeated and yet again until this noble battleship or canal boat or whatnot is running four miles to get three.

The wind-gauge is put on the rifle to use, which little fact escapes extremists the other way who let their groups build up just inside of the quarter of the bull'-eye until one shot flops clear out in the nature of ammunition error, or who make each wind correcting move just one step after the fact instead of before.

At the same time every little air movement doesn't call for an assault on the wind-gauge unless the shooter knows just what he is doing. The fuss may be over before he can shoot, or he may easily overdo the movement and get out of the bull where the wind would have left him in.

My Daytona fire control officer job to which Glenn Wilhelm assigned me, entailed hitting a strip of beach 75 yards wide at ranges from 1,000 yards to 5,000 yards. This in turn called for careful recording of the fire control data for each day, with the wind strength and direction as shown by our many anemometers and flags, and the amount set off on the gun to compensate for a given condition.

Hitting the strip between chapparal and water at 3.000 yards was comparatively easy with the boat-tailed bullet. be the wind what it might be. Hitting the entire State of Florida at this range with the 150 grain service bullet seemed at times utterly impossible. It is within 500 yards of the utmost range of the bullet, for one thing.

I can testify that Glenn and I have traversed a machine gun firing this service stuff, by intervals of two or three miles from a line that would have hit Iceland if far enough prolonged. to a line that would have hit Pensacola. without apparently touching the State of Florida during the entire firing.

What happened of course was that at some time or other in crossing the strip of beach which was searched by our bullet-hunting crews, the wind had changed and the burst had gone into the sea or the jungle where it should have hit the recording beach.

That beach was so windy one day a much scared recruit presented himself and saluted. The fact that he saluted proved that he was a rookie. "Sir, the firing point anemometer is busted" blurted the soldier.

So I went out. For the first time in three months there was not breeze enough to stir the little aluminum half-balls of the wind-recording instrument.

Part of our work included firing on a vertical screen at 1,000 yards, using the Mann rest and heavy barrel. This distance incidentally seemed to us short and trifling, about like shooting 50 yards to a long range rifle shooting addict

Day after day, getting elevation angles or occasionally groups for some particular type of ammunition, I watched the group build up, the while the anemometers buzzed at the firing point and at various intervals up the range.

The more I watched this shooting and the repeated and repeated groups in which the vertical was greater than the horizontal in spite of breezes getting to 10 and 15 miles an hour, the more I was impressed with the comparative indifference of such bullets as our modern boat-tail to small wind effect which would wreck a score with the old Krag—or even the 150 grain service 1906 bullet.

Not—mind you—meaning to infer that we can drive boat tail bullets through a 15 mile wind and not have to set off the wind-gauge to compensate, but to point out that the small fluctuations in light breezes are better ignored by the inexperienced wind-doper using such modern ammunition. They have so little effect, and occur so rapidly in the nature of light zephyrs that the beginner will do better to trust to the fine bullet taking care of him.

Wind-doping with such missiles at 500 and 600 yards is very much overdone. I will gamble that as many scores faulty through lateral errors during the Perry matches, are wrecked through over-manipulation of the wind-gauge as through actual wind effect on the bullet.

Probably our improved ammunition is a good thing, because it lets the tyro occasionally get in and clean up a long range match, and thereby encourage one thousand more just like him.

It is kind of tough on the old timer who learned his stuff in the hard school of the Krag or the black powder prior to that gun.

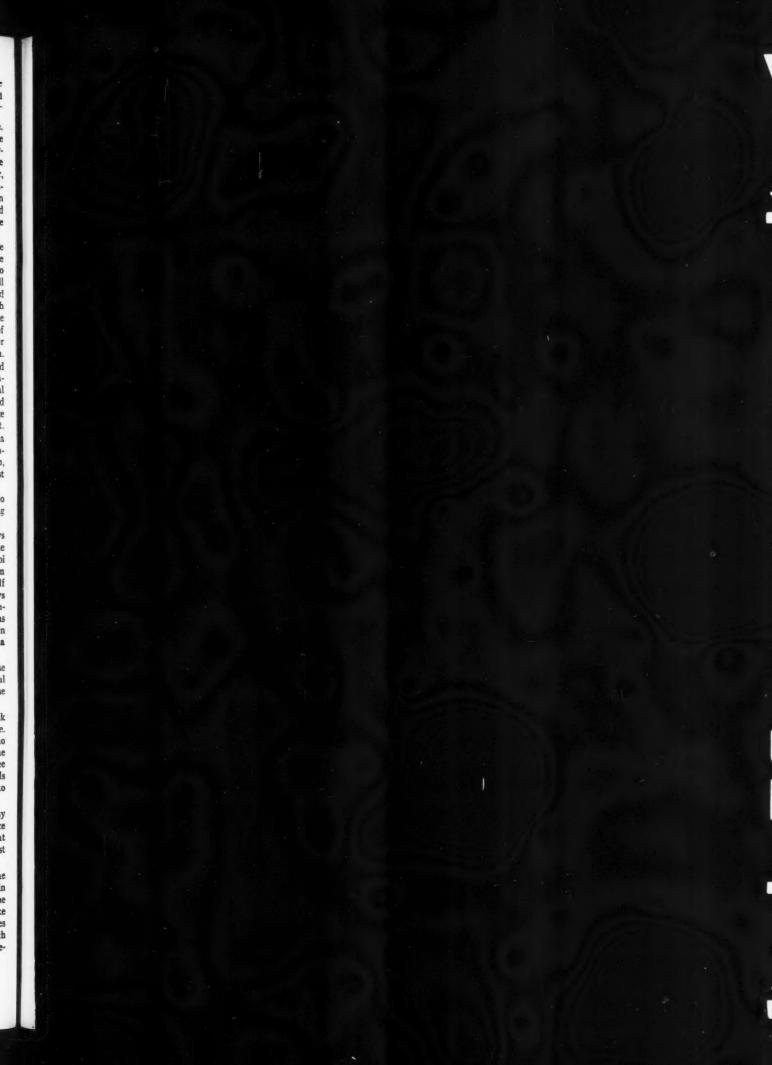
So much skill was required in the old days that the masters of the art stalked about the range in awful majesty while the hoi-poloi hung about, drinking in the words of wisdom that fell from their lips, not knowing that half the time it was the wrong dope. Not always did those old timers take the newcomer tenderly by the hand and show him the paths that led to rifle shooting glory. Only too often they dropped the hapless beginner through a coal-hole in the sidewalk.

Misinformation was not unknown in those days, a broad rubber band was not an unusual sight to prevent bystanders from reading the correct wind-dope on that sight.

It is rather difficult in these days to stalk in awful majesty about a big rifle range. About the first fifty yards, regardless of who he is, the stalker is likely to run across some bird who took up rifle shooting just three months before, and who ran out so many bulls at a thousand the day before that they had to hit him over the head to get him to quit.

Mebbeso the recollection of all such easy picking records, and our increased indifference to Old Boreas had something to do with what happened during our invasion of Canada last year.

I have suspected for a long time that some of our best lil' range record holders put in their time during such performance letting the wind-gauge exclusively alone and holding like the devil. Particularly is this proved in cases where the wind-doping equipment of such record makers consisted of a pair of three-power opera glasses.



si hi bi m of he w: an ten the hu Rowersis For rea the beginning and good plant at the of and

VER since early boyhood, I have wanted to shoot a wild turkey. The desire was probably fostered by the stories my father used to tell of turkey hunting in his native State, Kentucky. But the king of all American game birds was a rare denizen of northern Missouri, even thirty years ago, so I grew to manhood, turkeyless and discontented.

One day last September I discovered that a close, and long time, friend of mine, Dr. H. H. Lane, also suffered from the turkey complex. But in his tase there was an ameliorating factor: he really hunted turkeys, and, occasionally, actually found, and sometimes

killed them!

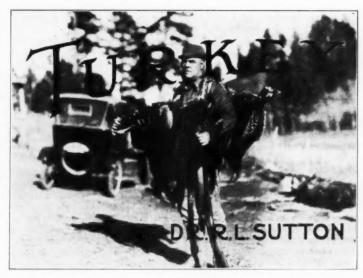
When he learned the nature of my hidden sorrow, he promptly invited me to join him on his next annual fall hunt in the wilds of New Mexico, and assured me that we would there meet His Royal Feathered Highness face to face.

It seems that for many years he and his brother, Ed. E. Lane, together with Judge J. Toley West, of Hagerman, and two of Mrs. West's brothers. William McKinstry, of Georgia Central, and Fred McKinstry, a prominent attorney of Kansas City, accompanied by a few more choice spirits (animate and inanimate), every November made a pilgrimage to the Sacramento Mountains in search of turkey and deer. My friend insisted that I should not return home empty handed, even though he had to kill the gobblers himself! Inasmuch as Dr. Lane is a man of his word, as well as the superintendent of one of the largest Sunday schools in our home town, you can imagine the eagerness with which I accepted his invitation.

The hunting season is only ten days long. and begins November twentieth. The best territory is the Sacramento foothills, south of the Mescalero Apache Reserve, and about a hundred and fifty miles west of Hagerman and Roswell. As the trail is a trifle rough in spots. we planned to start the caravan, which consisted of an automobile, a truck, and two Fords, on the evening of the seventeenth. reach the permanent camp on the evening of the eighteenth, tidy up on the nineteenth, and begin operating at daylight on the twentieth.

The truck, which was in charge of Oldham Moore and Henry Hanna, two handsome young head hunters from Hagerman, was sent ahead, in order that the boys might locate a good camping site for the first night. We planned to overtake them, somewhere near the YO crossing, on the Penasco, before midnight. It was well we left the hour of rendezvous a bit hazy, for there is always a weak link in the chain when it comes to assembling a corps of shooters.

By four-thirty, Ed. Lane had his car loaded, and was rearing to go. Dr. Lane, Wilbur Dean



Where the ragged old fir, and the lightning scarred pine. Rear aloft their proud heads, in manner Divine, And the wind whispers low, as a prayer or a sigh, And you feel the sweet peace of the hovering sky. -From Songs of a Sacramento Ranger.

and I rode with him. We drove over to the Judge's house, and after much difficulty succeeded in prying the guests loose from the dinner table, and helped them to finish loading the Fords. At first it looked as if we should require a couple of hay racks, but we finally got everything aboard, and meandered uptown, in search of the party of the fourth part, one W. A. ("Pete") Losey, the banker of Hagerman, and a famous Nimrod. Neither Pete nor his shooting partner, Mr. L. C. Fields. could be found. It was growing darker every minute, so we finally decided to pick up the Losey car on our way out. I had never before met the versatile Peter, but when we drove into the yard of the big Southern home. and one of the boys pointed him out to me, I krew that I had found a man. Physically, he c'osely resembles Irvin Cobb, and, despite the gallons of midnight oil that he has spent in the earnest and intense scrutiny of Pecos Valley mortgages. his sense of humor is robust, and unimpaired.

At the moment, he was strapping a huge blanket roll which contained a feather bed at least three feet thick on the rear deck of a peppy Dodge roadster, and his charming wife was hovering near, with a small, bright tin pai! full of d ied apples, an inspissated vegetab'e delicacy of which Mr. Losey is inordirately fond.

In his anxiety to cling to the feather bed and to the little tin bucket, however, Pete entirely overlooked the brand new, nickel plated gasoline lantern which sat quietly on the back porch and blinked at him until he was out of sight. It was not until we started to make camp, in the pitch black canyon, eighty miles away, that he recalled the omission, and it was then too late; but throughout the rest of the trip, his affectionate confreres saw to it that he had frequent daily reminders of the transgression. Pete is a good sport, however, as well as a splendid sportsman, and he continued on his way, unruffled and serene

It was almost seven when he finally hit the western trail, but the roads on the first stage were as smooth as velvet, and the little cars fairly buzzed.

Through Lake Arthur, Artesia, and on to Hope, that charming little village which hopelessly set its heart on a railroad that never arrived, we

At ten o'clock, Ed said we were nearing the YO crossing. and five minutes later, we saw the campfire on the river bank

The preferable camping site is in a rocky pocket, on the south shore, and here Moore

and Hanna had halted the truck, and were busy with a savory meat stew, in anticipation of our coming.

Following the ingestion of an almost unbelieveable amount of hot stew, bread and butter, and coffee, we unleashed our blanket rolls, and spread out for the night.

Kind reader, have you ever slept out under Nature's bright blue dome in the winter time, with naught but the scintillating stars o'erhead, and a small, well worn sandstone boulder for a pillow? Well, you can take it from me, it's the life. Although all of us may not agree on the same interpretation.

You lie there, and wink at the Great Bear. and flirt with the Seven Sisters, and think of home and mother, and steam heated bath rooms, and the frost settles in a thick coating on your right eyebrow, and your knees ache, and the dear little icicles try to find a permanent resting place between your helpless. outstretched toes.

And just about the time your plump but fragile old form has grown accustomed to the rugged surface of the pebble strewn landscape, you hear the range boss yell, "Everybody out!" and you pry open your eyes, to find another sixten hour day rolling in over the horizon. But you crawl out, and tiptoe over to the tiny campfire, as gingerly as if you had on a brand new pair of cut glass teddy bears. and after your boots are laced, and you have soused your head into a basin of icy river water, you begin to feel that life is worth while after all. Veteran cowpunchers have assured me that the first seven years are the worst, but few of us have sufficient vertebral stamina to stay with it for so long a time.

The Flying U ranch lay just across the river, and as this territory is famous quail ground, there was an open box of sixes in each car when we started out, and several shotguns were stripped for action.

When we finally encountered the birds, however, it was a motorcycle we needed, and not a shotgun. Nothing that we could do would induce them to leave the ground, they simply scattered, and scurried away through the mo-

the

obj

anc

Rif

this

by

7

orga

ship

0

corr

wer

land

and

cove

Axe

dow

targ

coul

F

men

put

to 8

with

H

Ohio

alth

to se

read

worl

filiat

mem

ing !

pora

tion

per i

In

squite and cactus as noiselessly and speedily as a freshly lost collar button. The initiated of whom Will McKinstry was high gun, blazed away at them on the ground, but old psychological barriers prevented me from doing this, and by the time my mind had escaped the thrall of habit, the quails were four miles away, hot footing it for the Texas border. As we neared Weed, the last little settlement that separated us from the foothills, the trail became both rough and rocky, and it was only by an effort that the truck could be made to top some of the grades. When the inclines were too great. Oldham would wig-wag for help, and all of us would hop out, like a bunch of Kikuyus, and flock to the colors. Three o'clock found us at Sowell's sawmill, far up in Perk canyon. Mr. Sowell had promised us the loan of a couple of riding ponies, and as we had brought saddles with us, Ed Lane and Fred McKinstry were quickly mounted on "Nig" and old "Roan," Dean took Ed's place at the wheel, and we were again on our way.

We were still twelve miles from the head of the canyon, and the road was like a nightmare. During the day, we had passed, and been passed by, several contingents of sportsmen, all of whom appeared to be headed our way. I have never seen so many Winchesters, outside of New Haven. The little Model '04 saddle guns, of .30-30 caliber, appeared to have the call, and their owners certainly knew how to use them. I saw one burly cowboy put a soft nosed bullet through the neck of a running covote at a hundred and fifty paces and he did it as easily and non-chalantly as if he had been perforating an empty tar barrel.

fifty vards away.

Not far from our destination, the canyon turns sharply toward the west, and as we rounded the curve, Will McKinstry excitedly pointed downward, into the little valley, and exclaimed, "What do you know about that!"

As we looked, eighteen big turkeys looked, too, and five seconds later, the whole flock was scurrying for cover, up the mountain side. The open season was two days away, and we were powerless, but we at least knew that one bunch of turkeys was in our bailiwick!

Near the head of the canyon, we found an excellent spring of fresh water, and an old abandoned shack. From this point onward, the canyon was dry, but a quarter of a mile further up, stood another, the last, cabin, a two roomed affair with a pretty good roof. We at once pre-empted this building, and you can imagine our delight when we found that it contained two fairly good stoves.

There were turkey tracks everywhere, and two well-worn deer trails led past the door, and down to the first water hole.

When Henry Hanna, who had unanimously been elected chef, beheld that old cook stove, his eyes were suffused with tears of pure joy, and he began making all sorts of rash promises regarding future menus.

Owing to the elevation, the air was crisp and cold, and it was not long before all of us were crowded around the glowing little stove,

in the living room.

We of course slept on the floor, and you should have seen (and heard) the twelve of us, stretched out in that twelve by eighteen space! I have been a soldier, and I've been a sailor, and two summers I spent with the Marines. but never before had I heard such snoring! I am not a musician, and I cannot describe it. All that I can truthfully say is that it was awful. Fortunately, we were always so weary by nightfall that nobody remained awake to listen to the fitful music.

Generally, we played poker until nine o'clock, when it was "lights out." The low man had to build the fire the next morning, and you may rest assured that our card games

were never thoughtless ones.

On the nineteenth, we fixed up the old corral, so our horses would be footloose at night, and then Dr. Lane, Judge West, Ed and I went prospecting. There are a number of canyons in the vicinity, and it is a comparatively simple matter for a tenderfoot to get

Even Dr. Lane had failed to connect, two years before, and had spent thirty-six hours wandering about in the foothills, and, during the previous year. Judge West had rescued a settler's little son who had been out for two days. Dean told us of a trilling experience that he once had in Idaho. While hunting elk, he wounded a buck, and in pursuing it, missed his way. He never did succeed in overtaking the wounded animal, but he did succeed in losing himself so effectually that it was three whole days before he stumbled back into camp, footsore and emaciated. He said that the first friend he met was the old camp milch cow, and he rushed up and kissed her, much to her astonishment and apparent chagrin.

I did not go astray until the end of the week. Then, one day, while exploring the high saddle which separates two of the larger canyons, I suddenly discovered that the sun was in entirely the wrong place! Fortunately, my compass set me right, but when I struck the main trail, several miles below camp, two hours later, I was a grateful white man.

Turkeys are hunted in various ways. It is practicaly impossible to stalk them. A fairly good plan is to lie in wait, near a much used feeding or watering place, and shoot them when hunger or thirst brings them in. But one or two days after the opening of the season, the turkey is an educated bird. No college or chiropractic could more quickly polish off a candidate. Occasionally, one can ride up to a flock in the woods, but this can usually be accounted an accident.

Once located, and frightened, the birds scatter, and it is then that the skilled hunter gets in his work. Dr. Lane and Wilbur Dean once called back, and killed, an entire flock of

Fred McKinstry, who is one of the best of game shots, now and then bowls one over on the wing with a rifle, but very few of us are in his class. The only individual of my acquaintance who ever approached it was Col. Ed Rust, who once shot a flying mountain jay's right ear off, clear across Jeffries Canyon.

A procedure which greatly appeals to a fat man is that known as the Dog and Pony method. A properly trained dog can tree a bunch of turkeys without much difficulty, and then one simply rides up the mountain side. and shoots them out. Picking birds off the roost in the early morning is a somewhat similar proposition. Neither plan is ever pursued by a real sportsman, however, unless he is very, very hungry.

Artificial turkey calls are of various kinds. The simplest is the well known "turkey bore." The cedar scrape box also is quite popular. Pete was an artist with this instrument, and Oldham Moore could make an orphan turkey's wail sound like the ring of a pewter nickel on a contribution plate by simply sucking through

The best caller that I ever heard, however, was a young chap by the name of Jay Fisher. who lived about a mile below our camp. Jay could not only talk like a turkey, he could think like one. He always knew, just about three jumps ahead. what a flock was going to do. He was a born turkey specialist. He always wore high heeled cowboy boots, and spurs with rowells about the size of a soup plate, and he habitually carried a little, sawed off Winchester carbine in the holster under his stirrup strap. Sitting, standing, running or flying, they all looked alike to Jay. I wish J. Fenimore Cooper could have known that

Incidentally, he owned a three legged, nondescript Collie dog, which answered to the name of "Shep." This canine was so famous a turkey dog that it had grown fairly bow legged, just carrying its reputation around. When the birds were few and far between, you should have seen my colleagues warm up to old Shep. It is now against the law to hunt turkeys with dogs, and to my knowledge neither dog nor master ever strayed from the straight and narrow path, or, if they did, they never strayed far. But at times the temptation must have been something appalling.

My first real chance at a gobler came on the third day. Will McKinstry and I had seen a flock hike up the mountain side that morning, and we went back to headquarters for some food and a canteen of water. I also took my little Savage Hi-power, in addition to a shotgun. We laboriously worker our way up to the top of the ridge, where we separated. I concealed myself in a brush pile, placed the loaded rifle at my feet, and laid the shotgun across my lap. At the end of two hours, I was still nibbling dried prunes, and praying for the coming of a turkey. A distant "cluck! cluck!" off to the left, put my nerves on tension, and a few seconds later, a huge gobbler, leading two beautiful hens, strode into the open space directly in front of me! I slowly lined up the ivory beads with the base of his neck, three inches above the wishbone, and pressed the trigger. The dull, sickening click that ensued convinced me that something was wrong. The gun was one of my especial pets, and had never before missed fire. But no shotgun, of any grade, shoots well when it is empty. I had unloaded it when I went into the kitchen, and forgotten to replace the cartridges! Pottering with the rifle, I had entirely overlooked the major weapon. I threw (Concluded on page 21)



"Ask and Ye Shall Receive—Maybe,"

Or Autobiography of Lawrence Park Club

By C. T. Patterson

M writing this not because I want to but because Ye Editor has requested it and I've put it off as long as my conscience will allow. Maybe it will help out some other dub's overworked secretary, for of all the games on the calendar this shooting game is the hardest to promote and the hardest thing any club has to buck in parental and wifely objection. Oh! Yes, I know Friend Wife is tickled pink to have us join a rifle club and get out and shoot, "so say we all of us," but we lie and we know we lie, own up now, don't we? Rifle clubs would do well to watch out for this kind of objection and try to overcome it by showing the ladies just what it is and enlist their aid in the club's behalf.

The Lawrence Park Pa. Rifle Club was organized in the late summer of 1920 and has steadily grown ever since, having a membership of about 200 at the present time.

Our first meeting was held on a street corner, the second one in an old barn used by the Boy Scouts. At this meeting, officers were elected and told to get busy, an outdoor range site was selected which was on unused and owned by the General Electric Company and which butted against Lake Erie and was covered by a dense growth of brush and vines. Axes, shovels, and brush hooks were put to work and we soon had a path we could shoot down for 200 yards, poles were cut and two target carriers erected out of anything we could get.

For the following four years, whenever a member showed signs of surplus energy, we put him into the brush, until now we shoot up to 800 yards and let George mow the range with a team.

Having been secretary of the Ashtabula Ohio Rifle Club, which was some club once although I understand it has somewhat gone to seed at present (hope the Ashtabula bunch reads this), I was quite familiar with the workings of the NRA so we proceeded to affiliate at once. Before the bad weather set in, we had succeeded in qualifying seven members, using the old modified navy course.

In the spring of 1921, we secured a building for an indoor range. It had been a temporary office building for a building contractor and was about 20x80 feet of frame construction and only partly finished inside, rent \$7.50 per month.

We soon had a back-stop up and started shooting. Shortly after, we were notified we would have to vacate 14 feet of the front of this building to accomodate a barber shop, so we built 16 feet onto the back end of it and let the barber in. The club continued to function but the barber left.

We used this building until June 1st, 1924, when it was dismantled and such a howl went up that it reached the ears of the officials of the General Electric who owned the building. Club officials and G. E. officials met and tried to make arrangements for another building. This was finally taken care of by the fact that the G. E. intended erecting a new hospital building and the old one would answer our purpose nicely, being 22x95 feet and of one-story construction. However, it would have to be moved to a new location.

With the organization of the club, our dues were set at \$1.00 per year and \$1.00 they are today, but with this new building to move and remodel it was necessary to replenish our treasury. A dance was suggested. Fine! Dance-hall rented, tickets sold, and we danced. Result—about \$40.00 deposited in treasury and a well-satisfied crowd of dancers. At the

next dance, we added \$100.00 to our pile. Then we cleaned off the brush for a parking place for autos, used the lawnmover over part of our outdoor range, and set up a couple of 18x20 tents. We then notified the public that we would, on a certain date, serve fried fish. We did—net profit, about \$35.00 and several new members at \$2.00 initiation fee and \$1.00 yearly dues.

During the summer of 1924, our schedule called for shooting on the outdoor range every Saturday and holiday. We decided to levy a tax of 15c on each shooter on these dates, all other days (Sunday excepted) shooting free and this also helped the lad who held our money bag. Ever noticed the tickled expression on the mugs of such lads when you hand them a roll of bills? It's worth the labor, and our worthy treasurer's mug is no exception.

In the summer of '24, we secured a condemned box-car from the railroad. These cars are condemned as unfit for the rough slamming in long trains but are ideal as a building being of rigid construction. We paid the man with the moving outfit \$80.00 to place this car near our 500 yard firing point. Several of our members (Concluded on page 20)

Below is illustrated a shoulder-to-shoulder match between the Ashtabula, Ohio, shooters and the Lawrence Park riflemen on the latter's 300 yard firing point. Title cut shows Lawrence Park's club house and indoor gallery.



struction of the carrier shown in the photos.

All machine work, vertical bar planed out of

a big piece of steel, etc. We make vertical

In Again

Finn Again

E had Annual Election at our Club the other night; and the members (a few) assembled with their faces clean and bright. Everyone was very happy and the business went smoothly until the nominations were in order for a brand-new President. Passed quick from person to five counts. Center is a four inch circle counting 5 with two-inch wide rings. Shoots out of the blacks are misses, nice target, if you hit it and not the fault of the target if you

Now we get down to the illustration. Our subject for the evening is Target Car-

riers. We show front and side views of one which is absolutely all right. We used to make them with an eight inch vertical bar but found that that put the target so high into the line of fire that very high shots would break up our pulleys on the butts so we lengthened the bar to fifteen inches. When you are shooting at 50 to 75 feet, high shots on the 50 foot

bar A out of common 1 inch or 11/4 inch angle iron. Cross bar B is 1/4 inch by 1 inch and is welded where the feathered arrows point. Cross bar B is of whatever length is required to span the carrier wires. At T we have two holes which are just a little larger than the wire on which the carrier is to slide. These just cut into two holes S. These latter are polished carefully and chamfered a little as the carrier slides on them. Holes T are tapped for a screw and, after the carrier is dropped over the wires, the screws are put in making it impossible for the carrier to jump off the wires. A similar pair of holes with slots as shown are put in the end of the horizontal bar. The operating rope is fastened to the outer end of the horizontal bar. Where the cross bar fastens of the vertical bar the angle iron is cut away, as shown at C. Wherever feathered arrows are shown it signifies that welding is done at that place. These modern welders sure are greasy when it comes to sticking things together. We now get to the target clamp which is made in two parts. D is a plain piece of 1 inch by 1/8 inch flat iron. At E a 1/2 inch hex head bolt is screwed into the iron and either made fast with a nut or welded. However that is, one face of the bolt-head is made parellel with the long side of the iron. This bolt

> Piece D is six inches over all. A hole is drilled for the pin H to pass through when the clamp is assembled, and a small hole F is drilled through E for the cotterpin L. Piece D is now welded to the angle iron A at the points U. The movable part of the clamp is the

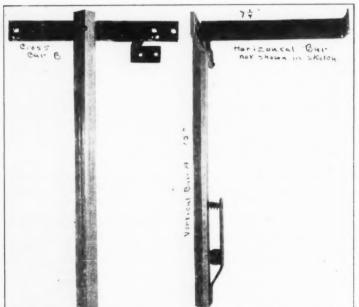
E is the stud on which the clamp turns.

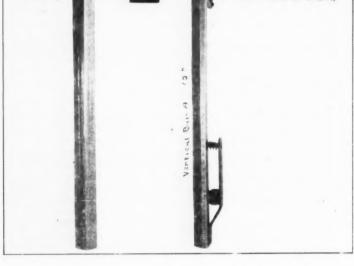
piece G, at one end of which is bent the offset shown. We found that a 3/4 inch offset is plenty. The pin H is riveted in; this carries the spring M; when the clamp is opened to

release the target. pin H compresses spring M and passes through the hole in D. The hinge is a piece of light iron I bent in a U shape. A hole is drilled at K and the hinge

riveted tightly on. Hole J is the same size as hole F in E. Assemble spring M on pin H and force the clamp down until cotterpin L can be passed through both hole J and hole F, and the clamp is assembled. We find that they hold firmly and are very easy to operate. We have had carriers with flat springs but never one that was satisfactory. Flat springs crystalize and weaken very fast. The coiled springs seem to stay put and can readily be replaced whilst flat springs have to be riveted in to be firm.

Well, guess that's all.

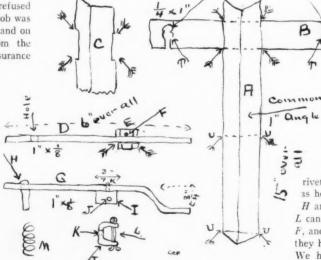




person, round the room the honor ran but without even hesitating they refused it to a man. Dad Farr said the job was easy; nothing to it but be merry and on rare occasions sign reports from the Secretary. He talked like an insurance

solicitor and a member fell for the bait-they made him Presdent without a second's wait. The Vice-President was easy. no duties at all for him: The motion to close nomination was carried with a vim. Now we're down to Range Officer who has to do real work, if the Gang is going to enjoy life he, at least, can't shirk. So we pick out a victim, a good lad he is, too, usually he's been on the job when there was work. Then they made me Secretary by a most unanimous vote; Range Officer and Secretary are synonyms for Goat.

Well, that's over and I feel better. Must be the Spring or maybe something I eat for lunch that gets me that way. We're back on the job; no big crowd out so we had a good time. Western A is a 20 inch black with



target strike very high in the butts with consequent damage to the hardware as aforesaid. We now come to a work of art, strictly hand made by no less a person than the

Author himself. We had to cheapen the con-

al

ch

ch

WS

is

T

he

of

nd

nt

ch

lel

olt

15.

gh

or

is

Ve

ed

to

gh

ce

A

in

in

110

at

e.

ut

ed

Pistols for Police

By E. A. Price

LAD named David, I believe it was, who first demonstrated the possibilities of the pocket weapon. To him had been assigned the odious task of bringing to justice a particularly tough customer called Goliath. Now David was small of stature and comely of face, and it appeared to some that the chief could not have made a poorer choice for Goliath was held to be the champion rough and tumble fighter of the period the only contender for his title being one Samson, who even then was in training for a bout-with lions as sparring partners. Armed, apparently, with nothing more formidable than his nightstick, the dainty David approached the jeering giant. In the eyes of the great crowds. which by now had formed behind each of the principals, the smaller man was about to be erased. But suddenly David's right hand flashed to his hip pocket and grasped an object which was concealed there. It was a light weight single shot weapon which hurled missiles of a goodly caliber. Many a time in his youth he had made tests for penetration, and he well knew its ability to perforate a horse's skull. Perhaps it was a touch of vanity (occasioned by so many spectators), or it may be that he honestly believed it productive of the best results-but be that as it may, he was seen to whirl his weapon rapidly a number of times (an act later to be known as the "roll," and despised by all true gunmen) before loosing a slug which caught his adversary fairly between the eyes and knocked him cold-For the first time in history, there had been demonstrated the possible superiority of the man who is not gifted physically but who possesses nerve, and confidence in the weapon of his choice

The officer who realizes that he has a highly efficient firearm where it can be instantly whipped into action, and that he has at least a fair amount of skill in its use, is not going to go in search of help because he happens to be outnumbered. When Gen. S. D. Butler was made Director of Public Safety in Philadelphia, he saw the need of better armament for the police force, so he armed them with .45 automatics—the pistol which Uncle Sam has found most suitable for the Army.

As to the caliber of gun most desirable for police duty I shall not pretend to have authoritative knowledge. The police records of one big city will offer evidence to prove the small calibers just as efficient man stoppers as the large ones; while the records of another city will show the big calibers to be superior. For years I have tried to collect all possible data on the effects of pistol wounds, and in a number of cases have secured first hand knowledge. From such cases as have thus come under my observation I have learned nothing. I have noted no difference in shock and killing power between the .38 Special and the .45. Either will shoot through a cow (yes, I have

done it) and neither will kill bossy quicker than the other.

Being truly desirous of determining if possible, the comparative worth of large and small pistols. I shot over two dozen dogs with six guns and automatics of practically every caliber, putting the bullets through their bodies at various angles. Between the tiny .32s and the big 45s there was a perceptible difference. Dogs shot through the heart with any caliber ran from forty to fifty yards before falling. Only once did one drop on the spot from a heart shot, and he was hit with the .45 automatic. Those shot through the middle of the body ran from about 75 to 200 yards regardless of whether struck by a .38 or a .45. Results on hogs have been similar. Dumdumming the bullets apparently has no effect on animals the size of dogs or hogs, but does give better results on possums and cats. Without doubt, a man's body is more responsive to differences in caliber, weight and morphology of bullets fired through it; so my experiments on animals were but a waste of

Yet, I would prefer to carry a gun of large caliber simply because we know it must be more effective than a small one, and I cannot help but have more confidence in it. If you feel somehow that a certain caliber is more effective than another, by all means adopt it. Since there is at least no remarkable difference between the shock of a .38 and a .45, it is evident that one should choose the gun with which he is most familiar the one which, to his hand, is the handiest and most accurate. Certain it is, that a quick hit with a .38 Special is far better than a slower him (or possibly total miss) with too large and cumbersome a weapon. It seems to me, however, that there is no excuse for a pistol of .32 caliber; the corresponding gun in .38 caliber is of such slightly greater dimensions.

Comparatively few officers like an automatic of .32 or .380 caliber because of their unreliability; and with such judgement I must admit concurrence. Personally, the only automatic I allow to stay in the house over night is the .45 Government Model. Yet, if a man has a good .380 automatic which has proven to be foolproof, and which he likes better than a revolver. I would not advise him to change. The little automatic is light and compact, and has more power than the revolver of similar caliber. To the police of some cities where the pistol is rarely needed, (as one would expect to be the case in the City of Brotherly Love), and where there is a desire to preserve the symmetrical lines of a handsome uniform as viewed from behind, weight and bulk of gun cuts a big figure. For this reason the smaller revolvers handling the .38 S. & W. cartridges are probably the most popular. Chief among these are the Colt Police Positive and the S- & W. Regulation Police. But very slightly heavier than these is the Colt Police Positive Special which handles the more desirable .38 Special cartridge. The latter gun with four inch barrel makes a superb weapon where it is desired to keep down weight, although it will not have the accuracy of the somewhat heavier Colt Army Special with four inch barrel or S. & W. Military and Police; nor will it fit a large hand as well. The last three revolvers are also chambered for the .32-20 rifle cartridge which has nearly the power of the .38 Special and is very popular with many men who fear recoil.

As a rule, sheriffs and their deputies carry heavier guns than patrolmen. They have no uniforms to muss up, and the call to action is frequent. Some carry a light pocket gun at all times, and strap on a big gun just before leaving the office to make an arrest. The sheriff of this county recently raided some moonshiners with his little .32-20; ordinarily he totes a .45 automatic. One of the belligerent ones jumped behind a barrel and repeatedly tried to pot the officer from behind the shelter with a rifle. The sheriff's bullets at first failed to perforate both sides of the barrel, but finally one slipped through and wounded the man in the leg. Here was a case where the .45 or even the ·38 Special would have proved more satisfactory.

I used to dum-dum my bullets a great deal. In the case of such big calibers as the .44 Special or the .45 Colt I would split the lead nearly down to the shell, make a second split at right angles to the first, and then spread the four prongs to the full caliber. Firing a crisscrossed bullet the prongs of which have not been previously spread only causes the cracks to close, and one's purpose is defeated. A large bullet so treated should give terrible shock, although I noted no such action on dogs, as previously mentioned. Double-splitting the .38 caliber bullet makes four very weak prongs which tend to break off, so it is best to split them but once, opening the crack widely with the knife as before. I have found these doctored bullets to be quite accurate at 100 vards. Upon hitting wood or tin they produce a much louder "rap" than the standard bullets. Also they have rather feeble penetration in soft pine, and since that diverting episode of the sheriff and the empty mashbarrel I have been content to leave my bullets unmutilated

The Editor of The American Rifleman has been telling me of something which should interest mounted police. It has to do with the popularity of the old Colt Single Action among a certain class of men who spend much of their time in the saddle. It was while in the western country that he made this interesting discovery which, strange to say, has never appeared in the discussions of the S. A. fanatics. The idea is this.—Many horses, particularly western range stock, go up in the

air when a shot is fired from their backs, and if a man has an automatic or double action gun in his hand he is liable to shoot himself or his horse while gathering the latter in. The point is well taken as regards the automatic, but it doesn't appear to me that the double action with its long hard drag should present much danger of accidental discharge: yet, the boys who ride the bronchos should know best. In spite of my recent unkind remarks regarding the old Single Action I am still quite fond of it and wish to see its best points brought out.

The Colt .45 Automatic Pistol is rapidly becoming a favorite with bank employees, payroll messengers, night watchmen, guards, and "Ossifers" of all kinds. Uncle Sam supplies his mail clerks with double action revolvers to take the same cartridge. The latter revolvers are designated as Model 1917, in both Colt and S. & W. makes, and were brought out during the war emergency to supplement the automatic. The Colt is no longer made for this cartridge but Smith & Wesson continues to manufacture it. The S. & W. Model 1917 was always more popular than the corresponding Colt gun because of its shorter reach to the trigger, smaller handle, lighter weight, and finer finish. I particularly mention these three weapons (the two revolvers and the automatic) because there has been designed for them a new cartridge which should greatly increase their popularity. I refer to the "Riot" cartridge recently put on the market by the Remington Arms Company, and made only in the .45 automatic caliber.

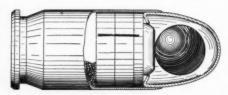
Externally the new cartridge looks much like the regular ball cartridge except that the shell cannelure is absent and the bullet jacket is of copper (free from the usual tin plating). Should you shake the cartridge, a mysterious rattling sound emanates from its interior. Also should you fire one into the air you would hear that weird whining sound which hitherto has been the exclusive property of the ricochet.

There are five components to the bullet—the copper case which is hollow; a .30 caliber round ball which rattles around in the beforementioned case; and three .45 caliber lead discs which tag along behind. The forward disc is about 1-16 inch thick at the periphery but is thickened in the center (on one side) to form a bump 5-16 inch in diameter which projects into the cavity of the case, making this disc 1-8 inch thick through the center: its weight is 37 grains. Each of the other two discs is 1-8 inch thick and each weighs 50 grains. The buckshot weighs 40 grains, and the case 27 grains. Total weight of this multiple bullet is 204 grains.

Only once, in the firing of about 100 shots where the effects of the bullet could be observed, has the buckshot separated from the case; so for practical purposes we may think of the load as consisting of but four components—the weighted case and the three discs. More often than not, the case keyholes; but the discs nearly always keep head on and make round, clean-cut, .45 cal. holes like a wad-cutter bullet. Two vital subjects remain for discussion—scatteration and penetration.

In respect to pattern they are extremely irregular, but on an average I have secured the following one-shot groups: —At 18 feet 3 or 4 inches; at 30 feet, about 11 inches (or the width of a man's torso); at 45 feet, about 24 inches; and at 60 feet, about 5 or 6 feet. The Remington factory claims smaller groups than these, so I suspect that too much firing with solid ball has knocked some of the choke out of my barrel.

Don't throw away your shot-gun with the idea of using your pistol on ducks next fall. Out of seven shots at buzzards just over the tree-tops I have gotten feathers but twice: one of them dropped both legs for a few minutes, but neither bird came down. On a number of running rabbits I have made but



45 AUTO PISTOL RIOT CTE

BULLET CONSISTS OF :SILDING JACKET - 27 GRS.
PLAIN LEAD DISCS (2) - 50 GRS EA.
DISC WITH BOSS (1) 37 GRS.
Nº I BUCKSHOT - 416RS APPROX.

one kill. Every sitting bunny at around ten yards has escaped through a hole in the pattern. They are, however, sure death to tin cans tossed into the air, blowing huge holes in them and knocking them far away.

Penetration was first tried in a piece of yellow pine-not heart stuff. With the muzzle held one inch from the wood (out of curiosity) the procession stayed in line and penetrated to a depth of 31/2 in. At a distance of one yard an irregular hole was made about an inch across and 11/2 in. deep. At 18 feet the case sank 13% in. the lighter disc about 34 in., and the other two discs nearly an inch. The case (with buckshot inside) always penetrates the most and the lighter disc the least. A small box of northern white pine was next set up at 18 feet. Its ends were 13-16 in. in thickness and about 15 in. apart. In several trials the case always passed through both ends of the box; while the discs went through the first end and either dented, stuck into, or got about one third way through, the second.

A solid, chunky-bodied game hen was placed sideways against a wall of concrete, and told to remain there. From a distance of six paces one shot was fired. One disc cut across the back, another broke the neck, while the case passed directly through the tough, muscular gizzard and flattened against the concrete Two medium-sized dogs next offered their services. Both were shot from the side, one at six paces and the other at nine. Some of the discs were found in the middle of the body; others under the skin on the far side. One case passed clear through both walls of the chest; the other went through the liver and stomach (5 in. in diameter and full of unchewed meat scraps) and stopped under the skin on the far side. While the dogs were not instantly killed, neither of them ran away.

The three discs recovered in one of those dogs were all of the 50 grain variety, so the total weight of that particular bullet must have been 217 grains. As this cartridge came down the assembling line at the factory, the man whose duty it is to insert one of the light discs with a wart on it evidently reached over too far and got a heavy disc from the pile of his fellow-workman.

What one most particularly wants to know is whether a heavy overcoat or the rib of a man might suffice to stop those little lead discs. Failing in all attempts to start something with my neighbors. I finally tested the Riot cartridge on a mule. It was a 1,100 pound animal which had been sacrificed that morning in trying out some new high-velocity rifle bullets, and the viscera had all been removed. A shot was taken at 18 feet against the animal's side as it lay on its back. The light weight disc slipped through hair and hide, nearly in inch of muscle, a costal cartilage, and was buried between the opposite ribs. One of the heavier discs passed through hide and muscle, and squarely struck the broadest part of a rib making a big hole and breaking rib off. The other disc was buried in the backbone. The case, after breaking through the hide and so forth, slipped between the ribs, jumped across the hollow chest cavity, smashed a rib in two on the far side, got through a little more muscle, and stopped just under the skin. A mule's hide is harder to penetrate than the heaviest clothing. For those who doubt this statement there is a simple test:-Wrap your coat about a chair, place your overcoat on top of it, and repeatedly jab a knife through the whole; then exerting the same amount of force try to perforate the hide of a mule.

If you possess a fair amount of skill with the handgun, you will have better success on small targets if you use the solid bullet, although the Riot frequently plunks one of its missiles where aim was taken. I was sitting on the bank of the Red River the other day, shooting at gar-fish as they rose to the surface. Running out of solid ball cartridges for my .45 automatic, and having my eye on a particularly large gar that I wished to lambaste. I slipped a Riot cartridge into the barrel. The distance was so great that I knew the four projectiles would scatter over an area of about 10 feet. When the big fish had its dorsal fins out of water I let drive, and as luck would have it one of the components struck it squarely on the back.

It has been suggested that these new cartridges might be too dangerous to by-standers. On a crowded street they undoubtedly would be dangerous to use, but then so would it be extremely risky to let loose a string of heavy conical balls which would be capable of killing persons many blocks away. In general, if the field is clear enough to justify a volley of solid bullets it should warrant the use of Riot

loads.

At close range the shock and knock-down effect of these scatter-loads far exceeds that of the large caliber dum-dum. For use against running targets, or for all manner of night work, the Colt .45 (Concluded on page 21)

). 1

the ust

me the

ght ver

oile

f a

cs

ith iot

ind

ifle ed.

ght de.

ge, bs.

ide

est

ng

he

gh bs,

ed

a

ler

ite

ho

ur

3

he

he

th

on

al-

its

ng

V.

ny

IT-

te.

el.

ea

ts

ts

ld

be

ry

ng

of

ot

st

nt



The American Rifleman

EDITORS

BRIG. GEN. FRED H. PHILLIPS, JR.
T. G. SAMWORTH — C. B. LISTER

Adv. Mgr. J. R. MATTERN — Art Ed. C. J. SMITH

Published semi-monthly on the first and fifteenth days at 1108 Woodward Bldg., Washington, D. C., By The National Rifle Association

(MORMON MIGRATION 1838)

After Joseph Smith's visit to Missouri in 1835 bands of Mormons began to arrive and settle in Jackson County. As their numbers increased their neighbors became fearful that they would gain control of the county. A series of armed assaults and minor persecutions were visited on them; their arms were taken away and they were finally driven into Clay, Carroll, and Caldwell Counties. In 1838 they got into a jam with the authorities. The governor called out the militia, the leaders were jailed and the rest, to a total of 4.000 men, women, and children, were driven from the state into Illinois.

E VERY time your watch ticks there are several new babies somewhere in the world, so the statisticians say. In spite of war, pestilence and famine, battle, murder and sudden death, there are always a few more people at sunset than there were at reveille.

The stork is always about to jump ahead of the undertaker, and in that fact lies the hope of the human race. If it were not

for the constant influx of new blood it would be only a few decades before the last man would be in possession of the entire world—fabulously wealthy but desperately unhappy, because there would be nobody to love or to fight with.

The breed of riflemen, like mankind in general, must have new blood every year or else its numbers, usefulness and enjoyment would soon be sadly impaired.

The veterans of the firing lines know this, and look upon newcomers at the matches with the same kind of friendly interest they feel in the growing population of the home town. Time was, they tell us, when champion shots used to study out new wrinkles and devices and keep them carefully concealed for fear that some one else might beat them with their own ideas. That selfish policy was the birth-control of rifledom. Newcomers received scant consideration, no "dope," or false dope, and were led to believe that the old timers were wonderful supermen, who made their scores by inborn skill that no one else could hope to equal. As a matter of fact, they made them largely through the possession of well tuned equipment and the use of the secret dope which they would not show, especially with regard to loading match ammunition.

The American Rifleman for a year or so, and you will find a veritable mine of information, upon every conceivable subject connected with the making of better scores. The best technical information of the foremost experts is there laid out for the benefit of everyone who can read. Equipment of the finest grade is available. Ammunition is loaded almost exclusively in factories, so all stand an even chance in that respect. Go to the matches and you find a crowd of jolly sportsmen, ready to help in any possible way the bashful newcomer who finds himself for the

first time in fast company. The men whose names you see printed as winners are about as wholesouled and companionable as the sun shines upon anywhere. They know how the novice feels, for each one of them has had to go through the process of becoming accustomed to a firing line where big scores are made, and learning to lose his self consciousness.

Men are not much different in ability now from what they were in the seventies, unless perhaps they are a little better physically. The marvelous scores of recent years could have been made long ago if the rifles and the ammunition had been capable of doing it. Still better scores are waiting to be made by the generation now in training. There never was a time when the novice had a chance to learn so much, to make such good scores, to have as much enjoyment, and to win the share to which his skill entitles him, as at the present, especially the latter.

In the Eastern Small Bore Championship Matches to be held at Sea Girt the first of July unusual pains have been taken to provide for the welfare of the novice. If he is good enough to win on sheer merit every match is open to him, and a long list of medals, merchandise, and cash prizes. On the other hand, he is so protected by the classification that there are certain prizes which only newcomers are eligible to win. In other words his chances are purposely increased and the veterans cannot walk away with all the winnings.

All this is as it should be. It means that more novices than ever before will have a chance to become thoroughly accustomed to the atmosphere of a big meet, under conditions which are not only enjoyable but satisfactory to the pride and the pocketbook. Sea Girt is a lovely spot in July. So why not now, boys? You mean to get in to the big matches some day. Better begin July 1.

Don't stay away because you hear that a truck load of fancy equipment is necessary. It isn't, as the scores of the International Small Bore Team show conclusively. That match is restricted to iron sights, many of the best men shoot factory built rifles, and their only other equipment on the line is a telescope that will spot the bullet holes at 100 yards.

That is all you need, Mr. Novice, in addition to the keen young eyes and the heart of a sportsman that God gave you.

The "Fourth" at Sea Girt

(Continued from page 1)

in their own club and after a bit drift away and be lost to the game.

So far as the reward is concerned, that is to say the prizes for proficiency at Sea Girt, it is safe to say that nowhere will there be found such a real profusion and wide variety in quality and class of merchandise and medals as are awarded there to the winners. In every match there are ten or fifteen merchandise prizes in addition to the cash distribution. The cash prizes are quite sufficient because added money is provided in most of the team and individual competitions.

As an illustration of the prizes given, the Camp Perry Special might be mentioned. In this, and individual competition, the winner gets a free trip to Camp Perry, all expenses paid. "Some prize" you say; right you are.

Who said small bore shooting isn't popular? And as we glanced through the program for this year we are impressed with the variety extent of the individual and team matches. A review here will certainly prove interesting. Wednesday, July 1st, for instance is devoted entirely to unlimited re-entry matches at 50, 100, and 200 yards. Heretofore the matches have been "limited." The best five targets count at fifty yards, the best three targets at 100 yards and the best five targets at 200 yards. At fifty and 100 yards the V-ring will not be used for scoring. At 200 yards it will be used.

The Moose Match at 50 yards, the target being a silhouette of a moose with the vulnerable points of the moose valued accordingly, furnishes a bit of variety for those who like rapid fire work. The Swiss Unlimited Re-Entry at 200 yards lends uncertainty in that the shooter continues firing only so long as he remains in the bull's-eye. In other words he may fire but one shot because if it is a four he is through: if it is a five he continues until he gets a four or less.

There are nine squadded individual and team matches and the Grand Aggregate Match.

The Eastern Individual Championship and the Team Championship are shot the morning and afternoon respectively of the second day-Thursday, July 2nd. This match is at 50, 100, Meanwhile the re-entry and 200 yards. matches continue all day.

On Wednesday, July 3rd the Palma Individual Small Bore Match is shot in the morning and the Palma Team Match in the afternoon. The distances are 150, 175 and 200 yards. The re-entry matches continue at 50

and 100 yards all day.

On the fourth day, Saturday, July 4th, the Eastern Two Man Team Match at 100 and 200 vards, the Spencer at 200 yards and the Camp Perry Special at 50 and 100 yards furnish a full day of shooting with re-entry matches at all ranges.

On the fifth and last day, Sunday, July the 5th, the Swiss Match at 200 yards is fired in the morning at nine o'clock. The Long Range Match at 200 yards, open only to B and C men is fired at ten o'clock then re-entry shooting continues until noon. This gives compet-

itors an opportunity to clean up any remaining tickets on hand before the shoot closes.

In conjunction with the Sea Girt competitions this year will be held the Eastern Zone Junior Matches of the W. J. R. C. This brings out the boys who like camp life and a bit of shooting. These competitions will be on the same basis as those held at Camp Perry last year and a full attendance is looked for. Mr. B. M. Russell, National Executive of the W. I. R. C. will be in charge of this camp.

The Rifleman's Prayer

Now I lav me down to fire The perfect score of my desire If I should miss that distant bull. My heart with sorrow would be full.

Oh Saints of shooters! See to it That he who labors in the pit Shall bring sweet solace to my soul White-disking every bullet hole.

But when I drop the rifled bore Lord. when Thou chalkst the final score. And all my misses - grant that I May spring on Thee no alibi.

Like other frail and sinful men I've pulled a goose egg now and then. And all I hope and ask of Thee Is but the score that's due to me.

-Ernest Coler.

Science vs. Philosophy

(Concluded from page 7)

the editors for permission to use the illustrations furnished them by Mr. Tindall with his manuscript. It was thought that their inclusion would simplify the explanation necessary and avoid the necessity for reference from one issue to another. Much of the foregoing criticism is based on material available in widely scattered publications, but I assume responsibility for the opinions expressed herein, and have attempted to make clear where the discussion was on matters of fact and where on opinion. A list of publications consulted in the preparation of this criticism is appended below for the convenience of anyone wishing to pursue the matter further. It is to be hoped that the material available in these publications, though not all necessarily true, will be consulted before proposing any further new theories of drift or "projectile attitude." 1907 Lissak, Ormund M., "Ordnance and Gun-(very technical; written for West

Point Cadets).
ray, Andrew, "Physics" Vol. I, (very 1901 Gray, technical; requires knowledge of the cal culus and principles of mechanics and presupposes working knowledge of phys-

1915 Ommundsen and Robinson, "Rifles and Ammunition," (non-technical for most part; principally on the British arm

1917 Kimball, A. K., "College Physics," (college text on physics for technical students: does not require calculus but does require math up to calculus)

1909 Mann, F. W., B.S., M. D., "The Bullet's Flight From Powder to Target," (com-"The Bullet's pilation of results of over 300 experiments covering a period of 38 years; mostly on lead alloy and blunt nosed bullets).

Muzzle Loader Accuracy

(Continued from page 8)

nails were hand forged and probably had quite large heads at that. When I happened to think that although I could now read and then place a shot in the 10 ring at 300 meters on the international target. I was a long way from actually seeing that small ring. With this idea in mind I had some conversation with two of our old timers in the country who say that they used as an aiming point, sometimes a white square of paper pinned on the backstop just below said nail, sometimes also a black circle made with charcoal and the nail the center.

Those of you who saw or read the account of the Flint Lock Rifle Shooting Match held at Camp Perry by Captain Dillin in 1923, will remember the target used there was a circle made with a charred stick and having a pencil cross for its center. The bullet nearest this pencil mark winning the match. The match was carried on in as near as possible the same manner as were the old time contests.

With the aiming point idea in mind we placed at forty yards a nice clean square of paper having two and a half inch black bull'seye, and drove a nail (a ten penny) into its Getting into our shooting position with Mr. Squirrel Rifle we proceeded to emulate an old time nail driver. The first shot punched a neat round hole about an inch and a half high but in dead line. We gave our peep sight one whole turn down and pulled anothed careful one. This time a nice spatter of lead remained on the nail head and shot number three, put the nail out of sight into the post our target was fastened on. Of course forty yards isn't sixty paces but its pretty near it and I for one can easily believe. after this experience, that more than one of the old timers used to punch nails just as they said they did.

It would seem that a man who could make such an accurate rifle would be sure to put his name upon it somewhere-not so however. No name or mark of any sort appears anywhere upon the gun. On the lock is cut "Moore." However, the lock has all the earmarks of English make and came from the other side of the pond. Recently I had an opportunity to examine a Morgan James rifle made in Utica, N. Y. This is the man who made one of those famous targets published in "Our Rifles." The famous rifling is identical with that in the old squirrel rifle so we would like to believe that my old timer was made by this famous rifle maker.

This small group and the nail driving has made quite a stir in our small circle of shooters here. One of the boys has a close chambered .250 Niedner, one has a .29-30 Stevens and another a Ballard .38-55. rather expect that there will be some real careful reloading done in the near future with an eye to a group at 100 yards smaller than 1 3-32 inches and some ten penny nail heads. Meanwhile Yours Truly is sitting tight waiting for the time to come to try fifty grains F.F. F. G. behind a .36 caliber 000 buckshot on old Mr. Woodchuck when he comes out.

. 1

ita

nk

Ce

in

ur

181

cle

int

ir-

he

he

We

of

on

u-

ot

nd

111

at-

tor

to

Of

its

of

ey

ke

ut

er

IV-

ut

he

an

Ap

ed

n-

as

125

of

30

ith

an

ds.

ng

F

Trajectory—Illustrated By John Lynn

◀HE English have continually different angles of view on rifles than Americans. and one of the best indications of the fact lies in their ways of giving figures of bullet fall. Our gun catalogs invariably tell how much the bullet rises above the line of sight at a point midway between gun and targets at 100, and 200, 300 yards and so on. English figures assume that the reader is a practical hunter who appreciates the fine points of lining up his sights in correct relation with the character of his cartridge and game. The English catalogs meet a hunterreader more than half way in the calculations that are absolutely necessary before any trajectory figures are of any practical use.

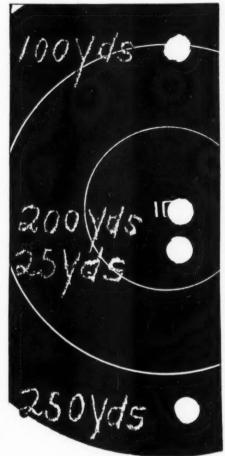
For illustration, It is generally accepted that the way to set the sights of a hunting rifle is to find the range at which the bullet strikes on the nail while rising midway there not too much to strike outside a vital area on the game sought. This vital area is often taken as about eight inches on big game such as dear and small bear. Eight inches will cover the heart region, or a deadly space on the neck. The bullet may rise four inches above the line of aim and still do acceptable execution. It likewise may fall four inches below line of aim.

After ascertaining the exact character of a bullet's flight from any cartridge and load, the English gunmaker presents the findings in the form of a diagram very simple to set down and very clear. The following is such a diagram made approximately correct for the .30 caliber 1906 load giving the 180-grain bullet a velocity of 2700 feet.

.30-96-180 grain, 2700 f.s. velocity. Center Impact compared with line of aim, for suggested point blank range of 250 yards.

The above diagram indicated that when the Springfield rifle sight is set for 200 yards, the bullet will strike high and low as indicated at the different points, both this side 200 yards and beyond that point. At 250 yards the bullet has fallen 2.5 inches. The full four inches of permitted fall would be noted at about 275 yards, but owing to the three or four inches represented in group despersion, it is best to allow an inch or more leeway. Within the 250 yards the trajectory may be described as "practically flat" for all woods purposes except such shooting as squirrels.

Recently a hunter was observed with a silver plate on the stock of his gun, bearing engraved figures arranged in this form. They carried his bullet out to 500 yards, by 25-yard steps. A glance at his gunstock gave him the exact number of inches to hold over or under to hit even a squirrel. His rifle was fitted with a three-power hunting type scope sight mounted with no provision to adjust it for range, although the mounts had zeroing adjustments both ways. He simply held suitably, to place his bullets as desired, the keen definition afforded by the lenses enabling him



This is where your Springfield will shoot when loaded with 180 grain bullet, muzzle velocity 2,700 f.s. The sight is set at 200 yards and let alone while you fire four shots at the various ranges specified in the drawing and aim carefully at the figure ten each shot assuming that you could see the ten clearly at these ranges and your hold is perfect.

te do this with a precision the unaided eye could not possibly discern.

For the man who wants his diagrams predigested, the English catalogs provide another form of diagram serving the same purpose-The idea is shown in accompanying illustration. A six-inch or eight-inch bull's-eye is drawn, with bullet holes indicated in a nicely-true verticle line. The hole .8 of an inch below the exact center represents the place where a bullet would strike when sight was taken at the "10" figure. The hole which cuts the "10" of course represents a shot fired at 200 yards range. The hole in the upper part of the bull's-eve is the 100-yard shot and the one in the lower part, is the 250-yard shot. Probably ten thousand trial shots would hardly give one actual target such as this, but the theory is served just as well by the trusty and unerring pencil of the artist. The one good feature of this bull's-eye diagram is that a person almost automatically memorizes its exact appearance and comparisons, and at any time in the field can visualize those bullet holes as the points where his bullet is likely to fly if he holds true.

Pot Guns By Ellerton James

HAVE read with a great deal of interest Mr. Booth's article on "The Game Getter."

Personally speaking I find that as a provider of game for the pot, and at the same time producing a small amount of noise, the best thing I have ever got hold of is a .44 caliber shotgun, which open slike a jack-knife. I have three of them, all different makes, the best one can easily be taken down and carried in your duffle-bag without any trouble. They are all three at the present moment in my camp in Quebec so I don't know exactly who made them, but I know they are devilishly hard things to get today.

I shoot with a regular game getter shot cartridge; for duck I use what I call red-heads, that is a brass shell with a big red cardboard head on it containing the shot; for partridges I shoot the regular .44 brass shell loaded with shot and a wad, the whole business being inside the shell and I find up to 25 yards it is pretty nearly certain death on partridges and doesn't make noise enough to scare the big game unless they are in the very immediate neighborhood.

I also always carry with me in my pocket three or four .44 caliber ball cartridges, simply to prevent my meeting Mr. Bear when I have stepped out for a 25 minutes' walk behind the cabin looking for partridges. I am perfectly certain if I ever do meet Mr. Bear that up to fifty yards that .44 caliber ball will make him extremely sick. I know from actual experience that up to 75 yards it is perfectly accurate enough and there is plenty enough penetration to make Mr. Bear sit down and take notice. I have never shot it into Mr. Bear but I have tried it at sticks and stones at 75 yards and found it is fairly accurate, and by shooting at tree trunks at 75 vards the penetration is plenty enough to go well into Mr. Bear.

Personally speaking I have never had any success shooting partridges with a .22 rifle. I well remember a good many years ago in New Brunswick I was alone in camp and a whole bunch of them came pecking around the bushes in the immediate neighborhood. I took the .22 caliber out and shot at two or three of them and they just flew away and I neved got them. I then went back in to the cabin and got the .405, and I succeeded in cutting the heads off three or four of them with this and I didn't tear them to pieces either but then that .405 was and is a wonderfully accurate rifle up to about 100 yards. So I long ago gave up the .22 for partridge shooting and I have also given up using light loads in the Springfield for the same reason, Mr. Partridge flies off with the bullet right through him and in the thick timber you never get him.

So now in my walks abroad, I carry either the .375 Holland and my guide packs the .44 caliber shotgun or the other way about. Or if I am going alone I sling the .375 Holland across my back with a sling and carry the .44 caliber shotgun in my hand. From personal

experience I should say the .44 caliber shotgun was more accurate than a game getter and doesn't weigh any more, and you never have to bother cleaning it. I clean mine perhaps once a month or perhaps oftener if when I happen to be cleaning out the big rifle the shotgun is handy and I can shove the same rag that I have just had through it

Why the .44 shotgun has gone out I don't know. It seems to fill a distinct need as a game provider when it is absolutely essential to make very little noise. The .410 shotgun is just as good a game getter but the cartridge carries more powder and makes too much noise for my taste. Incidentally, you can shoot the .410 shells in the .44 if you want to but it is not as accurate as its own cartridge.

"Ask and Ye Shall Receive-"

(Continued from page 13)

feeling ambitious, we had them cut the necessary doors and windows and put up desk and shelves. We then bought a steel range and coffee pot. This box car made a good place to store our range equipment, shelter for quite a gang, and a place to eat.

When our box car was ready to move, the cost was estimated by various members at from twenty to sixty dollars; but when we took the man with the moving outfit over the grounds he calmly stated "Eighty dollars." "Too much money. Get a big truck and trailer, set the car thereon and take it to the range." So said several of the boys who had handled the throttle to pull thousands of such cars over the road. I demurred but the truck and trailer were engaged the gang gathered at the railroad yard and were going to move said box car sans clubhouse.

After looking it over, the proposition looked different to some of the huskies and we decided to again call on the moving man. We did, paid the eighty dollars and in a couple of days we had a clubhouse on the outdoor range. It is there yet and it is surprising how much equipment has accumulated therein that we didn't know we needed before.

For several years, the New York Central R. R., in common with many large corporations, has been promoting athletics of all kinds among their employees. Aha! Why not a rifle club here at Erie? The matter was taken up with the athletic association officials. As a result, the N.Y.C.R.R. Athletic Association Rifle Club was born. Next-a place to shoot. Why, the Lawrence Park ranges, of course. Working on the old theory that united we stand, divided we fall, arrangements were quickly made for the use of these ranges for a yearly rental of \$40.00 (note expression of our treasurer's mug again) and all equipment of both clubs was made available to either club at any time. Result, more shooters, more rifles, etc.; and also more members at that little two bucks. When a man joined the N. Y. C Club he became a member of the Lawrence Park club but no Lawrence Park members were eligible to compete on N. Y. C.

teams. This to date has worked fine for both

The old hospital building previously spoken of was to be vacated about September 1st, 1924 but owing to delay in the building of the new one, the moving oufit did not start until late November, then deep snow prevented the moving of the building until late Ianuary.

We had put in the concrete block foundation for this building, late in the fall, so when the weather permitted. Mr. Moving Man set the building thereon and then h--l let loose. The building was on two pieces, being too long to move as a unit, was full of partitions, pipes, wires and a thousand other things we had no use for and all in the wrong place. However, the members, having been idle for several months, were feeling quite pert, so lanterns were put to work and night and day the wrecking went on. It would take a book to tell of all the difficulties that were encountered and overcome. Having members from almost every occupation, someone always knew how to do this or that and if he didn't have the tools, someone else did, so for about two months the grounds in and around that building looked like a shop of every known occupation and a cyclone mixed up.

One end of the building with one door and three windows was entirely sealed up and covered with ½ in. steel plates to take care of stray bullets. The backstop proper was made of ¾ in. steel plates bolted together and securely bolted to the wall at an angle of 45 degree and 60 feet of the building was laid out for the range proper. 11x12 feet was allowed for the kitchen and 5x6 feet for the toilet equipment with stool and lavatory. The kitchen was equipped with cupboard, sink, stove, etc., and the cooking utensils and dish pile is growing all the time.

The rest of the building was designated as the club-room with 4x12 feet blackboard, gun rack for about 50 rifles, coat-hangers, etc., and after putting on about two tons of plaster, closing up several doors and windows and relaying about half of the floor, the whole inside was painted, 4 foot border above the base-board a dark green, above this and ceiling a light yellow and all woodwork enamelled white. I lied, said whole inside, but our cook, W. C. Harris, and who is some cook, insisted that he be allowed to furnish paper for the walls and linoleum for the floor. 'Twas done and now "Bill" wears that contented smile and stands ready to feed the bunch any regular shooting night and has already used the kitchen for this purpose a couple of times.

We still have much to do to complete the range building, connecting up sewer, building chimney and painting outside. Grading and seeding start this week. However, we have it in shape to shoot and have about forty shooters each Tuesday night.

We use prone benches of heavy construction and of such a height that targets hang in the same place for prone, sitting, or standing shooting.

With the idea of making it a social as well as a shooting club, we put in the kitchen and also built four folding tables 38x16 inches.

These are placed against the wall and don't bother the shooting. They are quickly set up any time we want to serve a meal, which we did a week ago. One of the boys caught the greased pig at a Hallowe'en celebration and donated it to the club. Another volunteered to feed it until we were in shape to serve it. Another did the necessary bloodletting, the ladies cooked it and we all ate it, while "Bill" did the serving act. Hurrah for Bill!

Lawrence Park is a suburb of Erie. Erie is situated on the lake of same name, same lake is a fine place for fish tugs to work. Fish tugs need fish houses wherein to store their catch so all we need to do is to notify the fish company we want so many pounds of pike, perch, etc., for a fish fry.

We have two 10 x 20 foot tents which we set up on a nice level place on the range. We build an arch out of old brick, set on the cast iron pan 18 x 20 inches and five inches deep, start the charcoal fire underneath and "holler" for the fish frier, W. S. Wilson. Yea! same kid that went to Perry last fall and after shooting over the range for two days wanted to know what the red flag that they waved every other time he shot was for.

We don't know just what all Wilson puts in that pan, but after the mixture begins to boil he rolls those dear little pike and perch in corn meal, places them in a wire basket and sinks it in the boiling mixture, and about ten minutes later begins to holler, "Come and get it." And they all do.

Our fish fry last year was July 25th and this year will be June 5th. Anyone can have the whole recipe for these fish frys by asking for it

Last year the club members did all the work themselves, even to serving. But June 5th the Ladies Aid of the M. E. Church will cook an serve everything but the fish. Last year we served 250, and ought to double that this year if Wilson doesn't get stuck in the mud. If we do feed 500 I see where Bunker grins all over about two days later when we turn in the cash.

In 1921, we qualified nine sharpshooters and sixteen marksmen. In 1922, eight sharpshooters and ten marksmen, 1923, ten sharpshooters and eight marksmen, and then, owing to the change in regulations, we were allowed to shoot for expert and qualified two as experts, five as sharpshooters and seven marksmen, using the B course in all four years.

Our outdoor schedule started May 2nd with a small-bore and revolver shoot and continued until November, each Saturday and holiday. Tuesday next, we shoot a shoulder-to-shoulder match with two other clubs. A card party is in the making at the club-house and a fish fry will be held on the outdoor range in June. Visitors are welcome any time and our membership is steadily growing.

The standing of the club has been possible only through the generosity and cooperation of the officials of the Erie Division of the N. Y. C. R. R. and their athletic association, the officials of the General Electric Company, and the unquenchable enthusiasm and effort of club members and now I'm tired, good night, and good luck to all of you.

don't et up

h we

t the

and

eered

re it

the

Bill"

rie is

lake

tugs

atch

com-

erch.

We

cast

eep.

ller'

ame

fter

nted

ved

hoil

in

ten

get

and

ave

ing

ork

5th

ook

ear

his

ud.

ins

ers

rp-

ing

ved

ks-

ed

ty

sh

ne.

he

Turkey

(Continued from page 12)

open the breech, and rammed in a couple of shells, but too late. If those turkeys had been wearing running pants and spiked shoes they couldn't have disappeared any more quickly.

We enjoyed the long rides over the hills and through the canyons on Nig and old Roan. The latter was my favorite, for he was the most polite horse that I have ever met. In warming our way through the scrub oak (shinnery) thickets, I would occasionally get scraped off his back. When this occurred, Roan would drop into reverse, and remain directly beneath me, so that when I at last extricated myself, I would drop right back into the saddle. That's the sort of a horse that appeals to a man like me.

Fred McKinstry and Wilbur Dean were the first ones to bring in the big black and bronze beauties, but as time went on, the majority of us following suit, and on the day of my departure, the twenty-fifth, there were already more than enough birds to go around.

Losey felt that he, too. should be harking back to a roll top desk, and he was kind enough to take me in with him.

On the day of our arrival, all of the men had drained the radiators of their cars, but, unfortunately, Pete's car was pointed up hill. When we poured in a fresh supply of hot water, and started the engine, there issued from beneath the hood a strange, gushing sound like that which one sometimes hears in a public soup kitchen. Pete lifted the hood and took one look. "Doc, we're blowed up." he moaned. In the water jacket of the rear cylinder there was a crack three inches long, and the water was squirting out in a stream!

We called a council of war, but, unfortunately, Hanna and Moore, the only two men in camp who were motor-wise, were far away.

Finally, Judge West suggested that we cover the hole with a plaster of dough, and bind it down with a canvas patch, and wire guys.

I felt doubtful, but in an emergency, one must sometimes employ unusual measures; and if a pancake splint on an engine isn't an unusual measure, I never hear of one.

So the Judge mixed the patch, and the rest of us held the car while he strapped it on the rear end of the cylinder block.

We carried an extra five gallon can of water, for no one cares to be stranded far out on a cactus strewn plain, but it wasn't needed. That afternoon, at three, Pete piloted the little car safely up to the Union Station at Hagerman, and we had refilled the radiator only once during the one hundred and seventy miles!

Pistols for Police

(Continued from page 16)

automatic containing eight of these murderous cartridges (32 slugs, each capable of smashing through the hide and ribs of a horse) is about the most effective pocket piece devised. For sheriffs who are occasionally called upon to shoot through mash barrels two .45 automatics—one loaded with regular cartridges and one with Riot loads—should fill every need.



Suggestions to Club Officers

DUE to the fact that some of the clubs do not send in the necessary reports and returns on time, a great deal of extra work and considerable delay for all concerned, is experienced. The following is written in a spirit of helpfulness so that our objective may be gained, namely, to keep all the clubs firing. Often times club members will be told by the club officials that no supplies are on hand due to the slowness of the Government. When, as a matter of fact, the blame should be upon the officer of the club who is responsible for requisitioning supplies.

The first thing that a club is interested in after organizing and affiliating with the N. R. A. is obtaining supplies. These may be obtained through the Director of Civilian Marksmanship after an approved bond has been filed in his office. The authorized issues of supplies are obtained upon requisition, forms for which will be furnished by the D. C. M. Be sure that the number of members of your club is written on your requisition. Also, be sure that the requisition is properly signed by the officer of the club authorized to forward the requisitions. List all stores desired. To do these things properly will avoid delay.

After the requisition has been forwarded, the club secretary will receive a notification from the Director of Civilian Marksmanship that the requisition has been approved. Then, in due course of time, the supplies will begin to arrive. Shortly before the arrival of the supplies, the secretary will receive a communication from the arsenal containing some forms known as "Shipping Tickets." Do not throw them away!!! They are important papers!!! These will list the stores being furnished from that arsenal. When the stores arrive, check them carefully with this list, sign one copy of the "Shipping Ticket" and send it to the D. C. M. The other copy should be filed in the club records. Do not delay in signing and sending in these "Shipping Tickets," after the supplies are received. They are necessary to keep straight the records of the club in this

After receiving your supplies it is suggested that you make a list or inventory of them so that you may always know what government supplies you are responsible for. This list should be kept carefully in the club records and transferred to your successor. It will be found useful in making up your annual return.

This "Annual Return of United States Property" should be submitted as soon after the end of each calendar year as possible. These forms are sent to each club from the office of the Director of Civilian Marksmanship showing stores club is responsible for. They are important reports that are absolutely necessary. Until your annual return is in and found to be correct and all shortages paid for, no further issue of supplies will be approved. Although the returns for 1924 are long over-due quite a number of clubs have failed to send them in as yet. They should be sent in immediately so that you may obtain your next annual issue of ammunition and targets, etc. Club members should remember that the club is financially responsible for Government stores, and when some member loses or damages same, charge it to him.

Another important report is the "Report of Firing." This form is sent to each club and should be sent in properly made out and signed. They are necessary for the records of the D. C. M. so do not fail to send them in.

After the club members have been firing for practice for some time they begin to be interested in firing one of the qualification courses for insignia. These badges for expert rifleman, sharpshooter and marksmanship qualification are issued to members of civilian rifle and pistol clubs, provided they can make the necessary scores to qualify.

Reports of this record firing should be submitted to the Director of Civilian Marksmanship on "Record or Rifle Firing" sheets (ODCM Form 2). When this record is received, the badges will be mailed to the club secretary for presentation to those members who are entitled them. Copies of the above form will be furnished upon request.

Last, but by no means least, remember to address the Director of Civilian Markmanship, Room 1635 Tempo Building No. 5, Washington. D. C., when desiring to communicate with that office. Remember that the object of the D. C. M. is to assist the civilian refleman in every way authorized by law, so do not hesitate to write in for information. If your questions cannot be answered, you will be told so frankly, or informed where the information may be obtained.

We are afraid that some of the clubs may have gotten a wrong impression from the notices about caliber .22 short ammunition in the last issue. To correct that impression everyone is informed that there is an ample supply of new caliber .22 short ammunition on hand for issue to rifle clubs, but that the supply of the old at \$5.50 per case of 10,000 for sale to N. R. A. members has become exhausted. If any more of this ammunition is ever placed on sale a notice to that effect will be placed in this column.

Tur

ius

nai

ter

du

wh

wh

ab

ev

5110

an

th

ra

52

als

90

D

ne

35

ro

fr

th

th



Opening the Range By R. S. Boyesen

THE first of the official marksmanship qualification tests conducted monthly by the Los Angeles Police Department to determine increased salary awards for proficiency in the use of service revolvers was held Thursday April 9th on the police range in Elysian Park, with twentynine officers in competition and making an average of 259 points out of a possible 400. The local newspapers obtained a great deal of amusement from the fact that Chief of Police R. Lee Heath, who had pleaded so earnestly with the City Council to pay monetary awards to policemen showing skill in the use of firearms was high man in the opening tests and automatically raised his salary \$8.00 more per month. He has received scores of communications since that time in which he has been urged to invest his money in life insurance, oil wells, gold mines and building corporations.

A large crowd was on hand to observe the first of the tests which will be held each month until every one of the two thousand five hundred members of the Los Angeles Police Department has had a chance to either qualify as a successful revolver shooter or to obtain such a rating as will require him to take a course of instruction under experts assigned for this work. For the benefit of those readers who have not seen a recent article in this magazine telling about the rules adopted and salary awards authorized, the course and qualification scores are circon horowith

given netewith.	
COURSE	
No.	. Points
a. Slow fire, 1 min. per shot, 2 scores of	
five shots 1	0 100
b. Timed fire, 20 secs, per 5-shot score, two	
scores1	0 100
c. Rapid fire, 10 secs, per 5-shot score, two	
scores1	9 100
d Bobber target, 3 secs. per shot. 5 shots	
per score, two scores	0 100
Total shots . 4	0 400

QUALIFICATION SCORES

Marksman, \$5 per month, 70 per cent total 280 Sharpshooter, \$8 per month, 80 per cent total 220 Expert, \$12 per month, 90 per cent total 360 All qualifications as Marksman, Sharpshooter and

c. Expert. \$12 per month, 90 per cent total.

All qualifications as Marksman. Sharpshooter a Expert will automatically terminate at the end each fiscal year. June 30th, commencing June 30: 1256, and all additional pay for these grades w terminate at the same time. The qualification ye will commence April 1st and July 1st, w lose his grade, if any, and increased pay until again qualifies. Additional days of official qualification shooting may be announced if needed, permit all men to fire during these three month and officer may fire in each qualification shoot ur he has qualified.

An officer may fire in each qualification shoot until he has qualified.

Suitable badges will be furnished those men quali-fying for the various grades, to be worn only as long as the additional pay for that grade is being drawn.

It is expected that an average of 150 men per month will qualify hereafter for tests which may enable them to get a raise in pay that will last

for one year. Under the direction of Capt. F. C Crossman, N. R. A. representative, and Rangemaster Ronald French of the Police Department. all officers are authorized to go to the target range any day in the week and to practice or to give proof of their ability. In the event a man shoots a score of 270 points or better, the fact is recorded on his card and attested by the Rangemaster, and this automatically entitles him to appear at the monthly tests to "shoot for the money.'

Several members of the Department who had prematurely counted themselves as among those drawing extra pay due to proficiency in the use of a revolver, now feel very much poorer and are waiting for next month's test. Several others. who did not think they would do well, surprised themselves and the general public by getting "in the money."

Chief Heath is particularly desirous that the target work done by police officers shall be such as would indicate an ability to use a weapon that can be carried safely in actual police service and that can be drawn from a holster quickly. He therefore accepted many recommendations made by N. R. A. representatives. At the first of the qualification tests small booklets were issued and distributed, giving the official rules, the general procedure, hints for new revolver shooters, instructions for range and pit officers and much other useful material. Chief Heath had the books printed by the Police Printing Bureau and will have several thousand of these issued during the year. Captain Crossman is accredited with the authorship of the interesting treatise and served as one of the five judges. The other four judges are Col. Walter P. Story, 160th Infantry, Maj. Hewitt Callender, 160th Infantry California National Guard, and Police Commissioners Thomas Foss and I. W. Birnbaum.

The police officers who at the first chance shot their way to a raise in pay, and the scores they made, are as follows:

1	ame	Rank		Score
R. I.	ee Heath.	Chief of Pol	ice	342
G. 1	3. Carlson	. Motorcycle		337
J. M	olina. Pat	rolman		321
1t. H	. Jackson,	Patrolman		305
Cyru	s C. John	son, Sergean	t	302
J. F	Lawrence	e. Patrolman		298
E. E	. Hack. I	betertive Lier	tenunt	292
F. E	. Kierscey	, Acting Car	otain	291
W.	M. Queen.	Patrolman		287
H. 1	W. Holman	n. Patrolman		284

It will be seen by the above that Motorcycle Officer G. B. Carlson and Patrolman J. Molina of the Division of Jails were the two men who made high enough scores to join Chief Heath in drawing \$8.00 more per month as sharpshooters. The seven other men, in the list above

printed will each draw \$5.00 more per month pay until such time as they make higher scores and receive a better rating. At the present time nearly 100 men have qualified for the contest of May 7th, and approximately 200 more insist that they will qualify in time to try the new and interesting game.

The Director of Civilian Marksmanship will be able to attest the fact that previous reports regarding the organization of the Los Angeles Police Department as a unit of the N. R. A. have not been exaggerated. Memberships are being sent forward at an average of close to 150 per week, and the money is always collected in advance. At the same time members of the Department have purchased, to date, 64 cases of .45 caliber revolver ammunition from the Benicia Arsenal and are preparing to order 64 more cases before the end of the month.

A considerable amount of publicity was obtained in daily newspapers and magazines when the first of the shooting qualification tests was held, and there is widespread enthusiasm in the Los Angeles district because of the interest policemen have evidenced in the campaign to make them more accurate and skillful defenders of the general public. The tests have accomplished a great good in advertising the fact that criminals, particularly of the "gunman" type will not be safe in Los Angeles; and, also, the actual trials on the range have convinced many officers that it is folly to go out and practice with "trick revolvers" which cannot be used in actual police work. Men who used hair-triggers, movable sights, loaded handles, built-up trigger guards and other accessories are discarding these weapons in disgust and now will practice with good old fashioned .45 caliber revolvers that can be drawn quickly and used to advantage in time of emergency.

For the benefit of those who may be organizing shooting clubs, or who wish to encourage the police in their community to follow the Los Angeles system, we are offering herewith the first page of Chief Heath's booklet relative to qualifications required in the revolver shooting tests:

Qualification shoots will be on the first Thursday every month, and at no other time unless announced by special bulletin.

No officer will fire in a regular qualification shoot who has not previously fired at least twice through the regular course in record practice. who has not scored at least 70 per cent of The range will be open every the possible score. day except Monday to permit officers to practice, to make the required preliminary scores to entitle entry in the qualification monthly shoot.

The course of fire for qualification and increased monthly pay will be as follows:

creased monthly pay will be as follows:

Arm—Colt or Smith & Wesson revolver, barrel not longer than six inches, chambered for the cal. 45 automatic cartridge.

Trigger pull.—Not less than four pounds to be tested before the competitor commences his score.

Ammunition.—Full charge factory loads, either rim or rimless, of Government or private manufacture, either lead or metal patched bullets. No reduced loads or reloaded ammunition permitted in qualification.

Slights.—Fixed or non-adjustable. The rear sight ay be widened to suit the compelltor and any orm of bead not interfering with quick drawing ay be used, but no adjustable or 'target sights'

will be permitted.

Target,—56 yard Standard American with eight neh black and three and one-third inch 10-ring, for dow, timed and rapid fire. Target 'E', man-figure, sighteen inches wide and about four feet high, will be used for the Bobber course.

Distance.—For all firing, 25 yards.

Position.—Standing, gun held in one hand.
Coaching.—Permitted in all preliminary qualification and practice shooting. Not permitted in the disciplination of the process of the standard position and practice shooting.

. 1

nth

res

me

of

hat

in-

Pe-

ol-

iot

ent

ek.

ce.

nt

er

nal

re

en

24

he

ke

he

ls

1-

ds

a-

be

oe.

g

COLUMBUS EVENING DISPATCH SPONSORS FOURTH ANNUAL TOURNAMENT

The Columbus, Ohio Evening Dispatch has just concluded its Fourth Annual Gallery Tournament. This is one newspaper which certainly deserves the hearty support of shooters in its territory, as it has given them splendid support during the past four years. The match this year was not fired on the shoulder-to-shoulder basis. which was used in the preceding three years, and which from the . R. A. standpoint is the preferable way of holding these local matches. However, the match was apparently very much of a success. The rules governing the match this vear call for four stages, prone for the first week, sitting the second week, kneeling the third week, and standing the fourth week. Clubs entering the competitions were requested to keep their ranges open as many nights during the week as possible, and official targets had to be mailed not later than Friday night, the results being published in the Sunday Dispatch.

The high individual was Walter A. Good, of Ashland, with a total of 395. He won a Model 52 Winchester for his performance. J. R. Daum, also of Ashland, took second place with the same score. He was awarded a Savage Model 1919. Donald McMillan, of Mt. Vernon, a former winner of the competition, placed third with 301, and as a result is better off to the extent of 500 rounds of Remington Palma ammunition. There were 25 individual prizes, ranging all the way from a two cell flashlight up to five hundred rounds of ammunition, and these were distributed down the line on scores ranging from 381 to 233. These unknown score prizes were distributed on this basis, taking the score of the fifth high man in the tournament, and deducting six. This left a total of 381, so that the high score of 381 took the first unknown score prize. Six was then deducted from 381, so that 375 got the second unknown score prize, and so on down every sixth score until the twenty-five prizes had been distributed. The high man in each club received a silver cup donated by the Columbus Evening Dispatch, while the sixth high man in each club received a year's subscription to Hunter-Trader-Trapper, donated by that magazine.

SHOSHONI AND LOCK HAVEN SHOOT ONE ANOTHER TO A STANDSTILL.

In a series of three matches by mail fired at 50 feet prone, ten men per team, five high scores to count, the Shoshoni, Wyoming Rifle Club and the Lock Haven, Pennsylvania Rifle Club had a hard time deciding which was the best team. In the first match both teams turned in possible scores of 500. One of these possibles was registered by Miss Nellie Medhus, shooting for Shoshoni.

In the second match team possibles were again the order of the day. This time three Amazons stepped into the breach for Shoshoni by turning in possible scores, Miss Medhus repeating her performance, and Mrs. E. Thoren and Mrs. J. Kaiser entering the select circle.

In the third match both teams continued to total 500 for the five high men, Mrs. Kaiser and Miss Medhus repeating their possibles. When the targets had all been checked over, it was found

that the Lock Haven contingent had made a total of 135 V's for the three weeks, five high men, while Shoshoni had registered 122 V's. Result: another series of wins to the Lock Havenites. This latter team, by the way, has probably carried on a heavier schedule of telegraphic and shoulder-to-shoulder matches with other clubs than any other gallery organization in the country this winter.

SEATTLE RIFLE AND REVOLVER CLUB BULLETIN

First State Match was shot Saturday, April 11, eighteen shooters out including two who are not yet members of the club. Cook would have made the team only for that so he had better get into the club and keep some of the old-timers from taking the prizes.

Match was fired on target Western A, which is tricky to say the least. Twenty inch black bull but shots outside the black count for misses; on the standard A target the 4 ring is 26 inches; and lots of shots which merely resulted in the pit waving the hateful red flag would have been nice fours on the regular target. Lieutenant Wiltamuth says that he is going to keep a few of our Western A targets for the purpose of taking the conceit out of some of the good shots so those of you who made pretty low scores can feel a lot cheered up; when we shoot on the standard target later you will make much better scores than you now fear. Shooting was in three positions; prone, kneeling, and standing. Three sighters and seven record shots in each positionpossible score 105, and possible team score 525.

To make the explanation of the above target complete it is necessary to mention that the 20 inch black has five counting rings; the inner circle counting 5 being 4 inches in diameter and the rings 2 inches wide; therefore a score of any value required pretty consistent shooting into an 8 inch circle at 200 yards.

New members, please take notice that the Club has two Springfield rifles which members may borrow and use. They must be well cared for and returned to the office when required. Members wishing the use of these guns will get in touch with the Secretary.

Old members. You are missed at the range. We expect all of you out this Saturday. We will shoot two sighters and ten shots for record at the standard A target prone and two sighters and ten shots for record at the same target standing. Lots of room.

Dues. Eighteen members are still holding out on us. This is the last notice.

Pistol Shooting. Fort Lawton will have a shootfest with the .45 on May 6 and some nice matches later. Lieutenant Wiltamuth is getting together some nice prizes with the assistance of the Ranier Club and we ought at least to send out a team and take the prizes away from them. Our directors are hereby requested to consider the matter of this club offering a cup or at least a substantial contribution to one. Opinions on this matter can be whispered in the Secretary's ear this Saturday at any time when he is not trying to make the bull's-eye stand still.

Big Match at Spokane on May 9 and 10. If you have a chance to go you can get the dope at the Club office. State Match at Spokane, also, on May 31.

C. C. Finn, Sec'y.

SEA GIRT GUARD RANGE AGAIN OPEN TO CIVILIANS

The following circular from the office of the Adjutant General, State of New Jersey, dated at Trenton, April 20, 1925, is published for the information of civilian riflemen throughout the State of New Jersey.

1. Civilian rifle clubs are authorized to use the range at Sea Girt. New Jersey, for rifle practice during the period from May 1 to October 31, inclusive, 1925, on such days as will not interfere with the range practice of the National Guard, and under rules and regulations prescribed by the Inspector General of Rifle Practice for the government of the range.

range.
Clubs will arrange in advance, by correspondence with the Inspector General of Rifle Practice, Set Girt. New Jersey (prior to July 1, Passaic, New Jersey), for assignment of dates and information concerning the regulations governing the practice 2. The Thirty-second Sea Girt Tournament will be held September 5 to 15, inclusive, 1925, during which period civilians may enter the various matches o shoot on souvenir tickets.

By order of the Governor.

FREDERICK GILKYSON,
The Adjutant General

This continued cooperation with the civilian shooters on the part of the National Guard authorities of the State of New Jersey should be sincerely appreciated and every effort made to take advantage of the splendid range facilities at Sea Girt by clubs lacking adequate facilities of their own.

BATTERY C 212TH ARTILLERY WINS

Some time ago, Battery C, 212th Artillery, New York National Guard, broadcasted a challenge through THE AMERICAN RIFLEMAN for any kind of gallery competition. Their challenge was taken up by the 198th Coast Artillery, Delaware National Guard. A telegraphic match was arranged with .22 caliber rifles and .45 caliber pistols. The rifle match called for five shots in each of the standard positions at fifty feet on the A target reduced to the proper dimensions. The pistol match called for twenty vards, ten shots each, slow-fire and rapid-fire; teams of ten in each match; five high scores to count for record. The New York organization won both matches. The rifle competition was fairly close with a score of 488 for the 212th Artillery and 475 for the 198th. The New Yorkers walked away with the pistol match, however, with a total score of 731 against 432 for the Delawareans.

The 212th Artillery now desires to arrange outdoor matches by telegraph with the Service weapon under any conditions acceptable to both teams. In the April 15th issue, the Bridgeport Rifle Club stated that they were sorry that the 212th Artillery was not open for a match with 155's. The New Yorkers say that they are now open to any kind of a competition from cap pistols to 16 inch guns, teams not necessarily Tyros. This is certainly wide enough latitude to please anybody. Get in touch with the Commanding Officer, Battery C, at the Armory, 120 West 62nd Street, New York City.

LAKEWOOD WINS ANOTHER

The Lakewood Rifle and Pistol Club of Cleveland, Ohio have recently completed a match with the McKean County Club of Bradford, Pennsylvania. The match called for ten shots prone and five shots in each of the sitting, kneeling and standing positions. Lakewood turned in a team total for five men of 1196, and Bradford registered 1179. Rowe, of the Lakewood Team, turned in a nice total of 244 x 250, which score included a 48 offhand and a 49 kneeling.

Ju

A

der

did

DOS

sho

nat

of .

test

sho

also

ma Cha

tica beli

tion

thre

thir

You

han

Pan

tear

can

tico

how

the

repo

mat

vear

wen

who

ing

scop

place

1. 1

2. I

3. J

4. (

5. 8

6. 7

9. E

10. E

11. F

12. J

13. A

14. G

15. C

16.

17. B

18. A

19. 0

21. W

22. G 23. C

T

T

WILKINSBURG, PENNSYLVANIA, SUMMER PROGRAM

The spring and summer programs of the active rifle clubs are beginning to drift in. Most of these programs are nicely printed in folders or booklets suitable for distribution through sporting goods stores and other outlets. The following schedule of events from the Wilkinsburg, Pennsylvania Rifle Club indicates a wide variety of competitions which should be well supported by the sportsmen within travel distance of the Wilkinsburg range, which is located at Old Dream City Park, on the Verona car line, a few minutes out of Wilkinsburg.

May 2-50 yards offhand, 2 sighting shots, 10 ots for record.

z-50 yards offhand, 2 sighting the for record. May 9-100 yards, two position match. shots for record, prone. 5 shots for nding. ition match. 2 s. s., 5 shots for record.

May 16-200 yards prone, any rifle, 2 s. s., 10

shots for record.

May 23—25 yard revolver match. 2 s. s., 10 shots for record. 200 yard offhand practice with Springfield rifles. May 23-50 yards kneeling, 2 s. s., 10 shots for

May 30-Rising Bear Match.

May 30—Rising Bear Match. 2 s. s., bear rises seconds, 3 rises. As many shots as can be fired. June 6—100 yards, sitting. 2 s. s., 10 shots for scord. Any rifle, iron sights. National Rifle Day. June 13—300 yards, prone, any rifle, 2 s. s., 0 shots for record.

June 20—200 yards, kneeling, any rifle. 2 s. s.,

shots for record.

Jun 27e-50 yard revolver match, 2 s. s., 10

record. June 27-50 yards revolver match, 2 s. s., 10

shots for record.

July 4—All day, chicken shoot, 1 shot for match,
no sighters, 100 yards. Conditions and entry fees to
be fixed by executive committee.

July 11—Hunter's match, any rifle, 100 yards, no
sighters, 10 shots for record.

July 18—200 yards, standing. High power rifles.

2 s. s., 10 shots for record.

July 25—300 yards, two position match, 2 s. s.,
5 shots sitting; 5 shots kneeling.

Aur. 1—200 meter free rifle match; any rifle, iron

5 shots sitting; 5 shots kneeling.

Aug. 1—300 meter free rifle match; any rifle, iron sights, 2 s. s., 10 shots standing, 5 kneeling, 5 prone.

Aug. 8—100 yards offhand, any rifle, any sights, 2 s. s., 10 shots for record.

Aug. 15—Rising bear match, 5 shots for record at one rise, 60 seconds.

Aug. 22—Swiss match, 100 yards, prone, any sights, any rifle.

Aug. 29—300 yard match, 10 shots, no sighters, shots marked at end of string.

Aug. 29—300 yard match, 10 shots, no sighters, ts marked at end of string.

Sept. 5—100 yards, offhand, small bore, 2 s. s.,

Sept. 12—Rising bear match, 1 shot each rise, 5 es of 5 seconds each.

Sept. 19—15 and 25 yard pistol match, 2 s. s., 10 shots each for record.

Sept. 26—Chicken shoot, 1 shot for record. Conditions and entry fees to be fixed by executive com-

Any of the above matches subject to changes posted on the range in advance.

CIVILIAN STATE SHOOT FOR KANSAS

Word has been received that the civilian riflemen of Kansas hope to stage a State Shoot over the Fort Riley range on June 1st and 2nd. No information as to the program is available other than that the important match representing the individual championship will be fired over Course A. This will mean that all competitors will be entitled to receive the Regular Army decorations from the office of the Director of Civilian Marksmanship, provided the scores are properly certified and forwarded to the D. C. M. by the secretary of their club. The N. R. A. wishes this State Shoot all possible success and regrets that it is impossible to furnish any more complete data at this time. Further information relative to the shoot may be obtained by addressing Mr. E. I. Kuhn, 208 E. 16th St., Junction City, Kansas, Secretary of the Junction City Rifle Club.

TOPPERWEIN SWINGS TO MINNESOTA, MONTANA, AND NORTH DAKOTA

After a seven week's tour in the states of California, Oregon and Washington and four weeks in Oklahoma and Kansas, "Ad" Topperwein will swing into Minnesota on May 28th and 29th. opening his exhibition schedule at Owatonna, Minnesota. His complete itinerary for the next six weeks is as follows:

May	28-29 Owatonna,	Minn.
May	30 Rochester,	Minn.
	31 and June 1-2 Mankato,	
June	3-4 Eau Claire,	Minn.
0.0	5-6-7 Minneapolis.	
0.0	8-9 Superior,	Wisc.
8.6	10	Minn.
0.0	11-12	Minn.
4.0	13-14 Wadena,	Minn.
8-0	15-16Fargo,	N. D.
8.6	17-18 Grand Forks,	N. D.
8.0	19-20 Devils Lake,	N. D.
0.0	21-22-23 Bismarck,	N. D.
11	24-25 Billings,	Mont.
6.6	26-27 Livingston,	Mont.
0.0	28-29 Miles City,	Mont.
4.0	30 and July 1 Jamestown,	N. D.
July	2 Valley City.	N. D.
8.4	3-4 Fergus Falls.	Minn.
0.0	5-6Wahpeton,	
9.6	7-8 Alexandria,	Minn.
-		

The visits of Topperwein to any community where there is a rifle club afford a splendid opportunity for the club to obtain the support of additional sportmen in their territory by putting on a little shoot of their own to precede or follow Topperwein's exhibition. The local Winchester dealer will be glad to cooperate with civilian riflemen in arranging an attractive program, Topperwein, being a Winchester exhibition shooter, will report to the Winchester dealer in each town.

In the case of localities where no club is now in existence, the one or two interested individuals who are members of the N. R. A. should seize the opportunity afforded by his exhibition to work up sufficient local interest to organize a club. This is a splendid opportunity to cash in on the reputation and marksmanship of one of America's foremost exhibition shots. Don't let the chance

* * * LADYSMITH, WISCONSIN, REPORTS

Perhaps it will interest you to know that this club is establishing a new outdoor range. We were very fortunate in securing a perpetual lease on an ideal site for \$10 a year, and are now busy building butts and firing points. We intend to set up two target carriers this year and will add to them each year until we can complete the range. Can get 1,200 yards if we want it. though goodness knows what we can hit that far off.

The club was incorporated early in the winter, and we have prospects for an active summer. Our gallery season was very successful, our team entering fourteen postal matches and came up smiling in ten of them. On two of the defeats, we returned the dose in the second match, the only club we couldn't down being Saginaw, Mich. Our matches included Eau Claire, Superior, Bennett, and Solon Springs, Wisconsin, and Calumet, Saginaw and Kalamazoo, Michigan. The team averages 88.7 per cent in all matches, on a four position course, the highest score being 911 x

We shall be glad to hear from other clubs in Wisconsin desiring postal matches on outdoor ranges for dates during June and July preferably at 200 and 300 vards at this time.

MINNEAPOLIS GIRLS CLUB DOWNS NATIONAL CAPITAL SQUAD

The tie rifle match recently fired between the Girls' Municipal Rifle Team of Minneapolis, Minn., and the Central High School Girls' Team of Washington, D. C., was refired on April 30th, and won by the Minneapolis Girls with a score of 497 against 495 out of a possible 500 points.

The match called for ten shooters with the five high to count each firing ten shots on the official 50 feet N. R. A. target, in the prone position and using .22 caliber rifles with iron sights. Scores follow:

Girls Municipal Team Minneapolis, Minn.	Central High School Washington, D. C.
Gertrude Anderson 100	
	Caroline Bebb 100
Helen Schoonmaker 100	Helen Prentiss 99
Ruby McCourtie 99	Augusta Friedberg 99
Velma Foster 99	Elizabeth Robinson 99
Gertrude Dahlquist 99	Elizabeth Fallon 98
Total 497	Total 495

Misses Schoonmaker and Anderson of the Minneapolis Team turned in their usual perfect score of 100 and so did Miss Bebb of the Washington Team.

Mr. R. E. Cotton, coach of the Minneapolis Team and Mr. J. W. Crockett, coach of the Washington Team, acted as match official and scorer for their respective teams.

The match was arranged by Miss Agnes de La-Barre, director of the Minneapolis girls and Miss Louise Hart, director of the girls at Washington, D. C.

A similar match was fired on May 27th between the Girls' Municipal Team of Minneapolis, Minnesota, and the Jamaica High School Girls' Team of Jamaica, New York. Further notices of this will be published later.

NEW YORK STATE MATCHES June 7th to 13th

The riflemen of New York State, both civilians and National Guardsmen, will get together for the State competitions on the range at Peekskill the week of June 7th to 13th. The program will include about fifteen trophy events, including all the classic trophies which have figured in the New York State rifle contests of the past half century. Both individual and team matches for 200 to 1000 yards will be included in the program. The official programs may be obtained from the executive Officer, New York State matches, Room 829, Municipal Building, New York City. The Company Team Match, teams of four; Cruikshank Trophy Match, teams of six; and 71st Regiment Trophy Match, teams of six, will be open only to National Guardsmen or civilian clubs. The McAlpin Trophy Team Match and the individual matches will be open to all comers. Where necessary rapid fire at 400 yards has been substituted for the old 300 yard rapid fire stages in accordance with the regulations for the 1925 National Matches. A brief summary of the competitions, follows.

Sunday, June 7—Members' Match, 2 P. M. Monday, June 8—Crulkshank Tropy Match, 1 P. M. Tuesday, June 9—McAlpin Trophy, 8 A. M.; Sayre istol. N. Y. Match, 2 P. M.; Wingate, 2 P. M.; ogers, 3 P. M.; Old Guard Trophy, 4.30 P. M. Wednesday, June 10—Brigade and Headquarters atches, N. Y. N. G. only, 8 A. M. 71st Regiment.

3 P. M. Thursday, June 11—Governor's Cup, Skirmish, N. Y. N. G. only, 8 A. M.; Adjutant General's, N. Y. N. G. only, 1 P. M. Friday, June 12—N Y. State Match, N. Y. N. G. only, 8 A. M. Saturday, June 13—Thurston, N. Y. N. G. only, 8 A. M.; Roe, 1000 yards, 2 P. M.

AMERICAN INDOOR RECORD MATCH

The 1925 American Indoor closed with a new record score on the list, 494 made by F. E. Border of West Bend, Iowa. Mr. Border, however. did not at all have a walk away as he was opposed by the cream of the hardboiled smallbore shots in the country who can perform in the only natural shooting position that shows the science of a good shot. Border's shooting was witnessed by several of his club members and I can almost testify myself that its a true record as I have shot over the West Bend range on several occasions and know the boys can shoot. Have also met the members of their first team for many years in the annual Mid-West 100 Shot Championship Schuetzen Tournament. As practically all the leaders are well known shots. I believe it is unnecessary to give much introduc-The Sheridan, Wyoming, experts made their initial appearance in this match and came through with second place for Harry Palmer; third place went to John Kaufman, one of the old war horses from the Zettler Rifle Club of New York City. In fifth place we find S. D. Monahan, who was the only civilian member on the Pan-American team.

There are several members of last years Dewar team on the list. We also find several of the candidates from the Olympic team finals at Quantico, including H. G. Olson and his "Pretty Rifle," however, our old friend Col. C. E. Stodter was the only one who shot of the squad that went abroad, though John Grier entered, but didn't report.

The special prize for the youngest kid in the match went to Uncle Billy Hasenzahl, only 82 years, the youngest age reported. The team went to the Peerless Rifle Club of Cleveland, who all shot Hoffman barrels and US. N. R. A. W. C. Andrews dropped but two points shooting a Hoffman Ballard set trigger and Fecker scope. About the most lucky prize winner was A. Emerson of "Lost Nation" as he finished 120th

pla	ce besides capturing the booby prize.
1.	F. E. Border, West Bend, Ia
	Peters Tackhole; Peterson Ballard Schuetzen
2.	H. Palmer, Sheridan, Wyo
	John Kaufman, Voluntown, Conn 489
3.	Winchester short; Pope Ballard Schuetzen
4.	Curtis Liston, Johnston, Pa
	S. D. Monahan, Chicago, Ill 485
0.	U. S. N. R. A.; Restocked Winchester 52
6.	T. K. Lee, Birmingham, Ala 484
	Peters Short: Stevens Schuetzen
7.	J. A. Wade, Sheridan, Wyo 484
	Peters Tackhole; Winchester 52
8.	W. W. Stone, West Bend, Ia 483
	Peters Tackhole: Peterson Ballard Schuetzen
9.	E. Johnson, Cleveland, Ohio 481
	U. S. N. R. A.; New Hoffman
	E. N. Moor, Jr., San Francisco, Calif 480 Winchester Schuetzen
	Winchester Schuetzen F. C. Heim, Chandler, Ind
11.	Peters: Peterson Ballard Schuetzen
4.0	John Dorweiler, West Bend, Ia 476
14.	Peters Tackhole; Peterson Ballard Schuetzen
19	A. Stebbins, Jewitt City, Conn 475
10.	U. S. N. R. A.; Stevens, Grimes barrel
14.	Geo. Martin, Evansville, Ind 474
44.	U. S. N. R. A.:Peterson Ballard Schuetzen
15.	
20.	Peters Tackhole; Peterson Ballard Schuetzen
16.	H. G. Olson, Cressen, Pa 472
20.	Palma; B. S. A., Semi-Schuetzen
17	B. T. Strickland, Knoxville, Tenn 469
	No Report
18.	A. J. Huebner, Chicago, Ill 469
40.	Palma: Viedner Special
19.	
	Peters Tackhole: Peterson Ballard Schuetzen
90	A. E. Hart, Cleveland, Ohio. 468
	U. S. N. R. A.; Hoffman Martin
21.	Walter Wolff, Chicago, Ill
	Winchester Short; Winchester Schuetzen
22.	Gust Muhr, Toronto, Ia 467
23.	Chas. Norton, Ames, Iowa
23.	Chas. Norton, Ames. 10Wa 466

24. Edw. Muhl. Toronto, Ia. 25. M. W. Dodson, Philadelphia, Pa. 26. P. E. Brooks, Newport, R. I. 27. F. G. Valkenti, Jr., Philadelphia, Pa. 28. Mike Altman, West Bend, Ia. 29. W. L. Bruce, Cheyenne, Wyo. 30. Dr. B. J. Maytum, Paulina, Ia. 31. Prof. A. K. Freidrich, Ames, Ia. 32. J. E. Faust, Birmingham, Ala. 33. J. C. Logsdon, Sheridan, Wyo. 34. Nick Altman, West Bend, Ia. 35. W. C. Haack, Stockton, Calif.	465	H. P. Ronk C. G. Bartl
25. M. W. Dodson, Philadelphia, Pa	465 465	W. C. Haad
27. F. G. Valgenti, Jr., Philadelphia, Pa.	462	4. West Bend Tear
28. Mike Altman, West Bend, Ia	460 459	Nike Altmar
30. Dr. B. J. Maytum, Paulina, Ia.	459	J. Altman M. Altman
31. Prof. A. K. Freidrich, Ames, Ia	459 458	M. Altman M. Heiders
33. J. C. Logsdon, Sheridan, Wyo.	457	M. Freilinge
34. Nick Altman, West Bend, Ia.	455 453	5. Cheyenne Rifle Wm. L. Bru
36. Herb Frazier, Lost Nation, Ia.	452	C. A. Shafe
37. J. Muchlbauer, St. Louis, Mo	452 451	C. A. Shafe P. Bergeson E. S. Hawe
39. Wm. Riemers, Paulina, Ia.	450	Ed Bartlky
40. J. Altman, West Bend, Ia.	450	6. Pigeon Hill R.
42. Mrs. Walter Wolff, Chicago, Ill.	448	Prize \$6.
43. Alb Freeland, Chicago, Ill.	447	G. F. Marti F. C. Heim
45. E. S. Hawes, Cheyenne, Wyo.	441	R. B. Horny
46. C. A. Shafer, Cheyenne, Wyo	440	J. A. Miller B. Brabende
48. P. T. McNeil, Ames, Ia	439	7. Whiting Rifle Cl
33. J. C. Logsdon, Sheridan, Wyo. 34. Nick Altman, West Bend, Ia. 35. W. C. Haack, Stockton, Calif. 36. Herb Frazier, Lost Nation, Ia. 37. J. Muchlbauer, St. Louis, Mo. 38. M. Heldershied, West Bend, Ia. 39. Wm. Riemers, Paulina, Ia. 40. J. Altman, West Bend, Ia. 41. Jul Muhl, Toronto, Ia. 42. Mrs. Walter Wolff, Chicago, III. 44. Alb Freeland, Chicago, III. 44. F. Wolfinger, Stockton, Calif. 45. E. S. Hawes, Cheyenne, Wyo. 46. C. A. Shafer, Cheyenne, Wyo. 47. J. T. Causins, Paulina, Ia. 48. P. T. McNell, Ames, Ia. 49. H. S. Willard, Ridsewood, N. J. 50. John Miller, Evansville, Ind. 51. M. Freelinger, West Bend, Ia. 52. C. G. Barthold, Stockton, Calif. 53. B. Erabender, Evansville, Ind. 54. H. Chase, Newport, R. I. 55. H. P. Fletcher, Newport, R. I. 56. Miss M. C. Monahan, Chicago, III. 57. F. W. Parker, Jr., Chicago, III. 58. Wm. Almy, Newport, R. I. 59. Mrs. R. C. Wallace, Chicago, III.	439	C. T. Weste Roy Pratt Geo. Gibson
51. M. Freelinger, West Bend, Ia.	438	Geo Gibson
52. C. G. Barthold, Stockton, Calif	435	E. E. Russe
54. H. Chase, Newport, R. I.	432	O. R. Ander
55. H. P. Fletcher, Newport, R. I.	432	8. Swiss Rifle Club Fred Senn
57. F. W. Parker, Jr., Chicago, Ill	429	J. Muhldane
58. Wm. Almy, Newport, R. I.	428 427	F. Edgel Alb Peter
60. Fred Shenn, St. Louis, Mo.	127	R. Baumga
61. F. C. Payne, Los Angeles, Calif.	425	9. Ames Faculty I
63. Albert Peter, St. Louis, Mo.	423	Priza SE
64. R. P. Rasmussen, Racine, Wisc	422 421	A. K. Freid H. K. Davis P. T. McNe
66. R. Baumgartner, St. Louis, Mo.	420	P. T. McNe R. McCorm
67. W. H. McConnell, Cressen, Pa.	419	R. McCorm J. V. McKe
69. Geo. Gibson. Whiting, Ia.	418	10. Summit Rifle C
70. R. C. Wallace, Chicago, Ill	418	H G Olson
72. Dr. E. B. Loofboro, Janesville, Wisc.	414	Mrs. H. G.
73. O. R. Anderson, Whiting, Ia	413	H. M. Chri Mrs. H. G. W. C. Mesk W. McConne
75. Mrs. H. G. Olson, Cresson, Pa	411	Every fifth place
77. A. R. Anthony, Newport, R. I.	400	Every fifth place Monahan will rece will be 12 special p
78. R. C. Hilker, Paulina, Ia.	408 407	I Best 10 shot 1
80. Ed J. Cisler, Chicago, Ill.	407	1 Best 10 shot 1 2 Best 5 shot 50 3 Best single shot
81. S. Barkham, Ridgewood, N. J.	407	4 Booby prize 25
83. F. Engel, St. Louis, Mo	406	5 Lowest 5 shot 6 Lowest 10 shot
85. A. C. Anthony, Newport, R. I.	405	7 Most ones 3 8 First score repo
86. Al Montag, West Bend, Ia.	404	8 First score repo
88. R. J. Hart, Janesville, Wisc	399	9 First entry Fe 10 Most entries
53. H. P. Fletcher, Newport, R. I. 54. Miss M. C. Monahan, Chicago, III. 55. Miss M. C. Monahan, Chicago, III. 57. F. W. Parker, Jr., Chicago, III. 58. Wm. Almy, Newport, R. I. 59. Mrs. R. C. Wallace, Chicago, III. 59. Mrs. R. C. Wallace, Chicago, III. 60. Fred Shenn, St. Louis, Mo. 61. F. C. Payne, Los Angeles, Calif. 62. R. B. Harng, Evansville, Ind 63. Albert Peter, St. Louis, Mo. 64. R. P. Rasmussen, Racine, Wisc. 65. W. Ackermann, Toronto, Ia. 66. R. Baumgartner, St. Louis, Mo. 67. W. H. McConnell, Cressen, Pa. 68. G. B. Hofer, Clincinnati, Ohio. 69. Geo, Gibson, Whiting, Ia. 70. R. C. Wallace, Chicago, III. 71. P. Westergaard, Maunie, III. 72. Dr. E. B. Loofboro, Janesville, Wisc. 73. O. R. Anderson, Whiting, Ia. 74. Roy Pratt, Whitins, Ia. 75. Mrs. H. G. Olson, Cresson, Pa. 76. T. J. Biesel, Newport, R. I. 78. R. C. Hilker, Paulina, Ia. 79. E. E. Russel, Whiting, Ia. 79. E. E. Benel, St. Louis, Mo. 79. C. C. H. Biesel, Newport, R. I. 79. E. E. Benel, St. Louis, Mo. 79. E. C. Anthony, Newport, R. I. 79. E. E. Benel, St. Louis, Mo. 79. C. C. E. Stodier, Marfa, Texas 79. Mrs. J. S. McChesney, Chicago, III. 70. Hart, Janesville, Wisc. 70. Meckley, Cressen, Pa. 71. B. L. Roberts, West Bend, Ia. 71. Col. C. E. Stodier, Marfa, Texas 71. Col. C. E. Stodier, Marfa, Texas 71. Col. C. E. Stodier, Marfa, Texas 72. Col. C. E. Stodier, Marfa, Texas 73. Mrs. J. S. McChesney, Chicago, III. 74. R. A. R. Arbonas, Pauline, Is. 75. O. A. Thomas Pauline, Is. 75. O. A. Thomas Pauline, Is.	396	11 Youngest shoote 12 High individual
91. B. L. Roberts, West Bend, Ia.	392	
93. O. Jones, Whiting, Ia.	391	
94. Alb. Larson, Whiting, Iowa	390	E I COMPANY
96. N. S. Bunting, Jacksonville, Fla.	388	EASTERN MA
191. B. L. Roberts, West Bend, R. 191. S. E. Robinson, Waldwick, N. J. 193. O. Jones, Whiting, Iowa. 194. Alb. Larson, Whiting, Iowa. 195. O. A. Thomas, Paulina, Ia. 195. O. A. Thomas, Paulina, Ia. 197. Walter Hasenzahl, Bellevue, Ky. 198. H. M. Christs, Cresson, Pa. 199. H. F. Blocker, Toronto, Ia. 190. Aug. Willert, Toronto, Ia. 190. Mrs. G. A. Quick, Dodge City, Kan. 1904. B. Norman, Newport, R. I. 1905. Wm. Hasenzahl, Bellevue, Ky. 1906. S. D. Page, Jacksonville, Florida. 1907. W. S. Carrol, Ridgewood, N. J. 1909. G. A. Quick, Dodge City, Kan. 1909. G. A. Quick, Dodge City, Kan. 1909. G. A. Quick, Dodge City, Kan. 1911. J. W. Kernny, Cresson, Pa. 111. J. W. Kernny, Cresson, Pa. 112. J. Bielenberg, Toronto, Ia. 113. H. E. Lowman, Cresson, Pa. 115. L. E. Bigelow, Jacksonville, Fla. 115. L. E. Bigelow, Jacksonville, Fla. 116. Mrs. H. Bloompuist, Jacksonville, Fla. 117. A. B. Culbert, Cresson, Pa. 117. A. B. Culbert, Cresson, Pa. 118. H. H. Forrester, Jacksonville, Fla.	384	
99. H. F. Blocker, Toronto, Ia.	384	Scores have jus
101. F. Burkeoshrode, Jewitt City, Conn	375	round of the East
102. P. R. Siewest, Ames, Ia 103. Mrs. G. A. Ouick, Dodge City, Kan	374	schedule. The res
104. B. Norman, Newport, R. I.	372	sex defeated U.S.
106. S. D. Page, Jacksonville, Florida	365	defeated Framingl
107. W. S. Carrol, Ridgewood, N. J.	364	tested match; Br
109. G. A. Quick, Dodge City, Kan.	349	267 to 247. Rea
111. J. W. Kernny, Cresson, Pa.	347	seven club league
112. J. Bielenberg, Toronto, Ia.	340	idle each week.
114. V. H. Reid, West Bend, Ia	324	According to M
115. L. E. Bigelow, Jacksonville, Fla	324	treasurer of the l
117. A. B. Culbert, Cresson, Pa.	313	creating considera
117. A. B. Culbert, Cresson, Pa. 118. H. H. Forrester, Jacksonville, Fla. 119. J. B. Little, Cresson, Pa. 120. A. Emerson, Lost Nation, Ia.	302	of Massachusetts.
All ties were, as usual, decided by best last tar	266 get.	the league has unt
I. Peerless Rifle Club, Cleveland, Ohio	954	altogether indoors
Prize \$10. W. C. Andrews	198	dlesex Club has
W. C. Andrews Eric Johnson L. Shirkey	193	league started, and
L. Shirkey M. M. Foster A. E. Kart	186	was requested to
A. E. Kart 2. West Bend R. C., West Bend, Iowa	936	Haverhill Armory
Prize \$8.		the league to then
F. E. Border Edw. Montag	187	· The address of
O. H. Maberry	186	Street, Beverly,
		secretaries in other
3. Robert Island, R. C., Stockton, Cal. Prize \$6.	926	to get a line
E. N. Moor	193	League functions.
C. W. Randall	401	

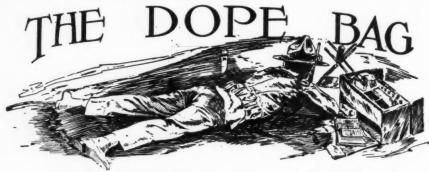
H. P. Ronkendorf	7
C. G. Barthold	Į.
W. C. Haack	
Nike Altman	4
J. Altman	1
M. Altman	9
M. Heidersheid 177 M. Freilinger 167	7
5. Cheyenne Rifle Club, Cheyenne, Wyoming 883	5
Wm. L. Bruce	2
P. Bergeson	0
E. S. Hawes	8
Ed Bartlky151	L
6. Pigeon Hill R. C., Evansville, Ind. Prize \$6.)
G. F. Martin 105	2
F. C. Heim	5
R. B. Horny	2
B. Brabender 166	0
7. Whiting Rifle Club, Whiting, Iowa 858 C. T. Westergaard 193	3
Roy Pratt 170	3
Roy Pratt	8
E. E. Russell	4
O. R. Anderson	3
8. Swiss Rifle Club, St. Louis, Mo. 846	8
Fred Senn	3
J. Muhldauer 181 F. Edgel 187	1
F. Edgel 167 Alb Peter 164	Z A
R. Baumgartne	i
9. Ames Faculty R. C., Ames, Iowa Prize \$6.	
A. K. Freidrich	4
H. K. Davis	ĸ
R. McCormick 168 J. V. McKelvey 149	3
10 C. 11 mag	
10. Summit Rifle Club, Cresson, Pa. 803 H. G. Olson 182	7
H M Christi	
vv. McConnen	1
Every fifth place on the list starting with S: D	:
Monahan will receive five dollars, in addition there will be 12 special prizes of one dollar each as follows.	3
1 Best 10 shot 100 Curtis Liston	1
2 Best 5 shot 50 Albert Freeland	1
4 Booby prize 256	2
2 Best 5 shot 50 Albert Freeland 3 Best single shot 10 R. C. Hilker 4 Booby prize 256 A. Emerson 5 Lowest 5 shot 18 H. E. Lowman 6 Lowest 10 shot 47 J. B. Little 7 Most ones 3 J. W. Kerney 8 First score reported March 12 F. C. Payne 9 First entry Feb. 5 John Grier 10 Most entries \$32.00 John Dorwelles	1
6 Lowest 10 shot 47 J. B. Little 7 Most ones 3	0
7 Most ones 3 J. W. Kerney	1
9 First entry Feb. 5	8
10 Most entries \$32.00 John Dorweiler	-
10 Most entries \$32.00 . John Dorweiler 11 Youngest shooter 82 years Wm. Hasenzahl 12 High individual team 198 W. C. Andrews	1
12 High individual team 198 W. C. Andrews	8

EASTERN MASSACHUSETTS LEAGUE ACTIVE

Scores have just been received for the second round of the Eastern Massachusetts Rifle League schedule. The results were as follows: Middlesex defeated U.S.M.A.A., 271 to 268; Arlington defeated Framingham, 252 to 251 in a hotly contested match; Braintree Guards defeated Lynn, 267 to 247. Reading didn't shoot, as this is a seven club league, necessitating one club to be idle each week.

According to Mr. David C. McNeill, secretary-treasurer of the league, the venture seems to be creating considerable interest in the Eastern part of Massachusetts. Lynn, which has a team in the league has until now been shooting practically altogether indoors. The attendance at the Middlesex Club has more than doubled since the league started, and just the other day Mr. McNeill was requested to attend a meeting of clubs at Haverhill Armory to explain the organization of the league to them.

The address of Mr. McNeill is 33 Beckford Street, Beverly, Massachusetts, in case club secretaries in other parts of Massachusetts want to get a line on how Eastern Massachusetts League functions.



A FREE SERVICE TO TARGET, BIG GAME AND FIELD SHOTS ALL QUESTIONS BEING ANSWERED DIRECTLY BY MAIL

Rifles and Big Game Hunting: Major Townsend Whelen Pistols and Revolve
Shotgun and Field Shooting: Captain Charles Askins Pistols and Revolvers: Major J. S. Hatcher

Every care is used in collecting data for questions submitted, but no responsibility is assumed for any accidents which may occur.

Reloading the .35 Winchester By Townsend Whelen

I HAVE been trying for the past year to reload my brass, that is, empties, but haven't had such exciting good luck or groups that I hear so much about from different shooters.

For instance, I have a '05 Winchester .35 caliber. The first load used was 49 grains du Pont No. 16, Remington 200 bullet, that is, blunt nosc. soft point. The results, bad accuracy, shot one and a half feet low at 150 yards (and its a fast speedy load and should of shot higher), terrible muzzle blast and recoil, but not very dirty on barrel, primer not hardly flattened, that is, didn't chart such boars, breech pressure in fact the The results, bad accuracy, shot one show any heavy breech pressure, in fact the regular Western Factory cartridges 250 grains showed more breech pressure on primers. What is wrong with this load? I suppose the velocity What of this load is some where between 2,400-2,450.

I shot this load into a soft clay bank. The bullets almost went to pieces. The bullet mush-roomed clear down to the base, but in most cases held together, of course only about one third of the bullet was left.

Next load was 40 grains du Pont No. 16, 200 grain Remington bullet, but didn't like it as it was too much like the 35 caliber Remington rifle load, factory.

I am going to relate my difficulty in getting bullets. I had one of the local sporting com-panies here order for me 100 .35 caliber Whelen 200 grain open point bullets. I got this, 100 .35 caliber Remington 200 grain blunt soft point bullets which were of course too short to be used unless seated way out of the necks, which is what

Next order was ordered to get (or to find out if I could get) the following 100 .35 cal. Whelen 250 grain open point and I got 100 .35 cal. New ton 250 grain open point. Well, I thought I could these bullets so I bought them like the others. But I looked up the bullet diameter (Mattern's) and found it .358 or .002 (two thousandths) of I thought since it was that much larger I couldn't use excessive or heavier loads than even standard, because the tighter bullet would give more breech pressure (or would it?)

So I loaded some cases I got from Mattern, new A-I quality brass with 47 grain du Pont No. 16, but alas!!! when I started to seat the bullet, it dropped through, that is into the powder. I tried every case I had (100) and the result was the same. Now what I can't understand is: If that bullet is .002 of an inch larger than the standard factory bullet why did it fall through the neck when the Remington 200 grain or standard 250 grain blunt point seated tight?

Shouldn't the bullet diameter be .356 in the case of the Newton and .358 in the Winchester? Then I can't see why the bullet dropped through

I don't think I had an undersize lot of Newten's. Then there are several other things I can't understand. Does the '06 use a .308 size bullet, or 311? in a 308 barrel (that is the diameter bore a Springfield isn't it?).

of a Springheld Ish t 1(?).

Then a 250 Savage uses a 257 diameter bullet in a 257 barrel, is that right? Then why does the following use the bullets .001 to .002 of an inch smaller than the barrels? .30-'30, 30-'06 diameter, .305 bullet, .338 diameter (33 Winchester) 340 barrel, etc. Mattern says the diameter of the .30-30 is 306 and I am told that it is the same as the '06, 308. Please explain, I also understand that the 303 Savage uses a 308 bullet in a 308 barrel. Then I read that the Savage uses a 311 bullet in a 308 barrel, then is when I want to tear my hair and throw everything into the It seems as if every river, including myself. I look at a reloading table I find and see different diameters. For instance, a friend of mine has one of your reloading hand books (I haven't any) and you say the bore or same kind of diameter, is 358 and Mattern says 356. I am all muddled up. Can you straighten me out? I sure will appreciate it, and also too, one of your hand books! I was fortunate enough to come out in Can you straighten me out? the 88th place in the Wimbledon Cup Match last year. I am nothing but a youngster, nineteen years of age. Maybe you can tell by all of my nonesense what kind of a "boob" I am. anyway, I wish to get your reply as promptly as possible, so as to get this burden off of my mind. Why can't I get 200 grain open point Whelen bullets? I thought Western made then? Also 250 grain. G. J., Kansas City, Mo.

Answer (by Major Whelen). You certainly are in a pickle over reloading for your .35 cal. Model 95 Winchester. Lets see if we cannot make things a little plainer to you, and help you over at least some of your difficulties.

The groove diameter of the 35 cal. Winchester Model 95 rifle is .3580 inch in minimum to .3585-inch maximum. The bore diameter is .3500-inch inch maximum. The bore diameter minimum to .3505-inch maximum. Depth of ling .004-inch. Twist one turn in twelve inches. The standard Winchester make of 250 grain rifling .004-inch.

The standard Winchester make of 250 grain bullet for this cartridge has a maximum diameter at the base of from .3585-inch to .3590-inch.

The .35 Whelen rifle as made by Griffin and Howe has a groove diameter of .3575 maximum to .3570 minimum. A bore diameter of .3503 maximum to .3500 minimum. The twist of rifling is one turn to eighteen inches.

The .35 Whelen cartridge uses the following bullets:

200 grain .35 Rem. auto. bullet made by Western Cartridge Company. Exact diameter unknown, think 359-inch.

250 grain .35 model 95 W. C. F. soft point bullet made by the Western Cartridge Company, diameter .359-inch.

250 grain .35 Newton open point bullet made the Western Cartridge Company, diameter

275 grain open point, thick jacketed bullet made by Western Tool and Copper Works, Oak-land, Calif., diameter .2578-inch.

It is probable that all of the above bullets will give fair accuracy in your rifle with the proper powder charges. However to properly seat and retain the bullets in the necks of the cases you will need a different muzzle resizing die for these bullets which measure .357-inch and those which measure .359-inch, or else you might get good results by using one die which resized the necks of the cases so that they measure .355-inch inside before the bullets were seated.

I think that the best results will probably be obtained from the regular 250 grain bullets made by any company specially for the .35 model 95 cartridge. The barrel is obviously throated cor-rectly for such bullets. Other bullets, particularly shorter bullets, will not fit up into the throat, and they must jump without support from the case through the throat, until they take the rifl-In doing so they deform themselves slightly. and as a consequence the accuracy is not quite so good. However, you ought to be able to get fair accuracy from the 200 grain Rem. auto bullet in your rifle-say ten inch groups at 200 yards or five inch groups at 100 yards

The average size group obtained at the Winchester plant when testing the .35 caliber Model 95 rifle at 200 yards with Winchester standard factory ammunition is ten shots in a circle 8.05 inches in diameter.

Forty-nine grains of du Pont No. 10 powder would seem to be a proper, safe load to obtain high velocity with the 200 grain Remington auto bullet. The muzzle velocity would probably be around 2,400 to 2,450 f.s. The fact that its center of impact was very low does not necessar ily mean that it was inaccurate, or that it did not have high velocity, but simply that this particular load required a higher sight elevation than usual with the factory load. I am not at all surprised that this load shot so very low. We often find that with the Model 95 rifles a high velocity load will have a much lower point of impact than a load of lower velocity. The model of rifle is extremely sensitive to flip or jump, and shows considerable variation in point of impact with various loads. This is due to the slots cut in the barrel for the sights and fore-arm stud, to the long breech block supported at its rear, and to the rather insecure fastening of the butt-stock to the receiver by means of tangs. It must be remembered that the Model 95 rifle was originally designed for black powder (.38172 and .40-72 cartridge) giving breech pressures around 20,000 pounds, and that as a rifle for high pressure smokeless cartridges it is really 30 years out of date.

Probably the most accurate results with your rifle will be obtained by using the 250 grain W. C. F. soft point bullet of any make, resizing the necks of the cases so that they measure about 355-inch inside, and seating the bullets so that they project just a little more out of the case than with the factory cartridge. For this 250 grain bullet 46 grains of du Pont No. 16 powder should be a good charge. But if your rifle is a take-down model I do not think that you can

get very accurate results with any load.

There are two systems of barrel boring and bullet fit. The original high velocity smokeless rifle was the 303 British Lee Enfield. The English instituted the system of making the jacketed bullets above to the control of bullets about .0015-inch smaller than groove dia-meter, on the theory that the bullet would expand and fill the grooves completely, and that best results and lower pressures would result. Twenty-five years ago, when we were endeavoring to get better accuracy from our Krag rifle we found that very much better results would be obtained if the bullets were made exact groove diameter, or about .00025-inch larger than groove diameter. Our more modern rifles have the bore and bullet fit this way, but all the older smokeless rifles and cartridges are constructed on the old English system, and have never been changed. Thus cartridges like the .30-30, .32-40, .33 W.C.F, 35 W.C.F., .405 W.C.F., and the barrels for them are made on a system which is really 25 years behind the times. Likewise the rifles which use them, in their construction, are also out of date. About the only modern rifles and cartridges, and the ones from which really superior accuracy is obtainable as a usual thing, are the .250-3000 Savage, 30-06 Springfield, 300 Savage, and the various still more modern cartridges and rifles made by Griffin and Howe, the Hoffman Arms Company, and the Niedner Rifle Corporation. With such rifle groups inside two inches at 100 yards, or four inches at 200 yards are common.

As originally and still made, the .30-'06 Winchester rifle has a groove diameter of .3080-inch minimum to .3085-inch maximum. All bullets for this rifle used to be made with a diameter of about .3050-inch, following the British system. Winchester .30-30 bullets are now, however, made to measure .308-inch, and some of the other makers have also changed their bullets to this dia-

meter I think. Bullets for the .303 Savage rifle usually measure .311-inch. I think that the makers of the rifle originally gave their barrels a groove diameter .312-inch. But then Savage began to make Model 1899 rifles for the 30-30 Winchester cartridge as well as the .303 cartridge, and they soon found that they could bore all their barrels with a groove diameter of .308-inch to .309-inch, and get good results with either cartridge. This uniformity of boring resulted in greatly decreased cost of manufacture, hence we have the .303 Savage rifle with a .311 bullet shot from a barrel with a groove diameter of .308-inch to .309-inch, Oversized bullets like this give considerably increased breech pressure. Also often rifles in which they are used do not shoot with their best accuracy until the barrels have become well warmed But in this case the relatively light load made the practice possible without running into troubles from high pressure.

The very best accuracy of all is obtained from the Springfield rifle and National Match ammunition. The standard groove diameter of the Springfield barrels is .308-inch to .309-inch, but one seldom goes over .308-inch. The bullets one seldom goes over .308-inch. The bullets measure about .3083-inch to .3085-inch. The throat of the barrel is very accurately reamed to take the profile of the point of the bullet, so that when the cartridge is seated the lands practically touch the bullet, and straighten it up with its axis in line with the axis of the bore. When fired the bullet slides nicely straight into the rifling with the minimum deformity. are very uniformly made, and also have thick, tough jackets and hard cores, and they resist deformation wonderfully. In addition the barrel of the Springfield has no slots cut in it at all. The breech block is uniformly supported at its The breech block and receiver are made of steel which has been specially heat treated to give great hardness and toughness after machin-Many of the less modern lever action and other rifles are made of soft, easily machined steel, not heat treated, so as to make manufacture and machining easier and cheaper. Such rifles are not necessarily less safe than others, but with modern pressures the steel will upset, the breech block will set back, and it is not wise to load cartridges with heavy charges or very tight fitt-ing bullets for the head space of the rifle would quickly increase to the point where the cartridge cases would split circularly in front of the rim. In addition the Springfield has a one-piece stockthere is no joint at the small of the stock, the rifle being extremely stiff from muzzle to butt.

I am sorry to say that the entire edition of the little booklet, "Cartridges and Loads for American Rifles," was exhausted some two years ago, and no more are available.

A WOODCHUCK LOAD

I AM wondering if you would care to make an expression of your opinion on a proposition concerning bullets. Bullets for woodchuck shooting with the .30 caliber Springfield.

I used to use a 170 grain .30-30 Winchester S.P. loaded with a pretty stiff charge of No. 15 du Pont—about 2,700 F.P.S. This load was very effective indeed and blew up the 'chucks in good shape, whether they were hit amidships or otherwise.

I discontinued using this load for several reasons. Among these were the desire to get a lighter bullet which would probably not ricochet so often, for we have lots of rocks around here. Then, too, it seemed as though this old load was altogether too heavy for a woodchuck; the bullets were not the best fit, so I am told, and the accuracy was quite fair but not the best in the world.

Last year I loaded some 150 grain Western Open Points for 2,700 F.P.S., and late in the summer packed off for some shooting in New York State. I had a glorious time in a beautiful rolling country, where there was enough shooting and a good diversity of ranges. I had a great time, but I often found woodchuck meat and blood spatters, the poor old chuck having scrambled to his hole for the last time. There were so many cases like this that I am rather inclined to think that the jackets on those Western Open Points are too rugged for the soft parts of a woodchuck. This may, or may not be so—I do not know.

I am going away again in a few weeks, and while I have some ideas, I have not made any ammunition yet. I am on the fence in this connection, and that is why I write to you. Consideration has been given to the 110 grain Remington and a non-fouling 150 grain pointed soft

Have you any definite information about the 110 grain? There are plenty of 400 yard shots where I am going, but of course most of the shooting is done at quite a bit shorter a range. Do you know whether it gets wild and drops like sin after 150 yards?

I guess you get the drift by now, and when you get a chance and feel like it, if you would make suggestions I certainly would appreciate your doing so. A.T.H., Providence, R. I.

Answer (by Major Whelen). I have had a very large number of letters from correspondents who have been using the Springfield for woodchucks. They one and all dwell on the great efficiency of the Remington Hi-speed cartridge, 110 grain bullet at M.V. 3,500 f.s., as compared with any other load. I do not think that you can better it for your purpose.

It is easy to reload with a duplicate of this Hispeed cartridge. The Remington 110 grain Hispeed bullet can be obtained from the Modern Bond Company, Wilmington, Del., or any sporting goods store can order it from you direct from the Remington jobber. The Remington Company itself does not handle components of its ammunition except through jobbers and retailers. This bullet should be loaded only in first rate cartridge cases, with a charge of 56 grains weight of du Pont I.M.R. No. 17½ powder. I think you should get excellent results from this cartridge. Its trajectory over 400 yards should be flatter than that of any other load, its accuracy should be equal to any, and it should anchor the chucks every time if struck in head or body.

.45 BULLETS

IN the April 1, 1925 issue I notice that Mr. B.S. Albertson, Jr., in his article "Will the Larger Bores Come Back?" speaks of a load for the 45-70 of 125 grains of black powder and a 750 grain lead bullet. Now, I have a new 45 caliber

Springfield which was bought through the N.R.A. last year for \$1.50 and I would like to know if such a load would burst the barrel.

I believe I remember seeing your recommenda-

I believe I remember seeing your recommendation for an extreme load in the .45-70 but I don't think it was anywhere as heavy as this.

If this load is safe where could bullets of 750 grains weight be obtained? Thanking you for any information you may give. R.V.S., Chicago.

Answer (by Major Whelen). If you will read Mr. Albertson's article again you will see that he speaks of a possible load for a .45 caliber rifle of .45-125-750, and not for the .45-70. There are several old .45 caliber cases that take 125 grains of powder. On the other hand I know of no 750 grain bullet in .45 caliber. The heaviest I know of is the 550 grain Postell bullet, now long obsolete. It was used 35 years ago by Georgia riflemen in the .45-70 with 75 grains of powder. They used it one season only as they found it too heavy. A number of cam latches were blown off the Springfield breech blocks. The heaviest load you can use with safety in your .45-70 Springfield is 70 grains of powder, F.G. black, or C. G. Kings Semi-smokeless, and a 500 grain grooved lead bullet, cast one to sixteen.

HEAD SPACE

I JUST received a specially selected model 1903 rifle. Why does the bolt have so much play forward and backward? Is this head room?—it doesn't act this way when loaded. Second, why doesn't the big lug on the side of bolt have any bearing when closed tight. It shows a space like this line —. The lug or side of bridge doesn't touch.

Third, which is right on-off-up or down when firing?

Fourth, this gun is stamped Model 1903, but it doesn't mention 1906.

Fifth, what does this mean w. E. s. stamped on side? H.M., Springfield, Pa.

Answer (by Major Whelen). Most of the matters you mention are features of the U. S. Rifle, Model 1903 (Springfield).

When the bolt is closed without a cartridge being in the chamber, the mainspring pushes the bolt slightly forward into the space which is ordinarily occupied by the head of the cartridge case, and thus allows a certain back and forward motion. This is not what is known as "headspace." This is not a defect, and is as it should be.

The rear lug on the bolt is the safety lug, designed as a safety precaution in case the two forward lugs should give way, which never happens. It purposely does not bear against the bridge of the receiver. Did it bear here the bolt would have a bad jump to one side when the rifle was fired, and this would be very detrimental to accuracy. This latter is one of the defects of the British Lee Enfield rifle. Long breech blocks supported at the rear are almost always detrimental to the finest accuracy.

The magazine cut-off should be turned to ON (that is up) when you wish to use magazine fire, that is use the rifle as a repeating rifle. It should be turned to OFF (that is down) when you wish to use the rifle as a single loader or to keep the magazine in reserve. It should also be turned to OFF when you wish to use the rifle for position and aiming drill or for practicing the mechanism of rapid fire.

position and aiming this to placetaing and mechanism of rapid fire.

This rifle is the U.S. rifle, caliber .30 Model of 1903, hence it is stamped "1903". At present it uses the "Ball Cartridge, Caliber .30, Model of 1906."

The stamped initials on the side of the stock are merely marks by means of which that stock can be traced through the various processes of manufacture at Springfield Armory.

manufacture at Springfield Armory.
You should send ten cents in coin to the Director of Civilian Marksmanship for a copy of Training Regulations No. 320-10 "Weapons, United States Rifle, Caliber 30, Model of 1903, Accessories and Appendages." This publication will give you most full information on the rifle.

LEADING TROUBLES

WHAT I would like is your advice on the following. My friend and myself each bought last week a New Service Target Model Colt with 7½-inch barrel in the .44 Smith & Wesson special caliber and after firing 25 shots we noticed the barrel leads very badly about ½ inch in front of the throating and on the lands as well as in the grooves.

This is very hard to get out even with a brass brush and it does it with the factory loaded shells as well as the home loaded which is cast twenty parts lead to one part of tin. We are using a very good lubricant in the Ideal lubricator of bee's wax and Japan wax mixed with a smail amount of vaseline and a very small amount of graphite air blown type.

No solution seems to loosen up this lead. What do you think can be the trouble in these new guns? Is the throating at fault or is the barrel rough? As we paid fifty dollars for these guns each we feel as though a new gun of this type should not do this.

What do you do to prevent this or remove this leading from the barrel?

What is the best powder to use, the Bull's-eye, or the No. 5 duPont, for this large size gun. I have both on hand.

What do you consider a good score for a fairly good shooter at 20 yards on the 20 yard target in 10 shot strings?

Answer (by Major Hatcher). The leading in your Colt New Service Target Model must be caused by a slight roughness at this point. The best way to do this is to remove all the lead thoroughly, and then smooth up this part of the barrel with Motty Paste, or some other very fine scouring material.

This Motty Paste can be obtained from P. J. O'Hare, 178 Littleton Avenue, Newark, N. J., the cost being fifty cents.

Besides smoothing up the barrel, the Motty Paste will also remove the lead.

For full loads in this gun, the No. 5 duPont and Bull's-eye are about equal, but for reduced loads the Bull's-eye is better.

For a fairly good shot, any score over 80 is

RELOADING DOPE

THE following are some re-loading problems that have been puzzling me for some time and on which I would appreciate very much the

advice of Major Whelen.

1. I am using some of the N.R.A. pyro powder, lot \$40, behind the 170 grain, 6 B.T. bullet with the recommended load of 48 grains of the powder, which gives me a velocity of 2,580 f.s. and a mean pressure of 50,800 pounds. Would it be possible to load this powder to give the standard 2,700 f.s. without passing the safe and uniform burning pressure for this powder? Would it be possible with the 9 B.T. bullet?

2. Is the above powder as satisfactory behind the 220 grain bullet as du Pont No. 16, if so what charge should be used and what velocity would be obtained?

3. What is the status of pyro powder loaded in dirty shells (Camp Perry 1924 empties)? Would you expect any deterioration in accuracy after six month, a year, in several years? Such loads to be kept in an ordinary living room.

4. I have loaded du Pont No. 80 in dirty shells after full charges and can find no change in the accuracy after two months as they still make possibles on the standard N.R.A. target at 100 yards. The load is 18 grains of the No. 80 behind the 150 grain service bullet. From some of your recent statements I am let to believe that such reloads may show signs of deterioration after a few weeks, am I right? Will not No. 80 deteriorate more rapidly in cases from previous reduced loads of No. 80 than from full charge loads? Can you give me some data on the accuracy life of such reloads in dirty cases?

on reloads in dirty cases?

5. Recently I have been reloading some .45-70.

cases using the 500 grain bullet, black powder and the regular Government .30 caliber primers but have not fired any as yet. Is the flash of these primers to powerful for black powder, and am I liable to get dangerous pressures and eratic burning by using them? R. G. S., Akron, Ohio.

Answered (by Major Whelen). You state that you are using 48 grains of Pyro D.G. powder, Lot 540, behind the 170 grain 6 degree boat tail bullet, and getting M.V. 2,580 f.s., with a mean pressure of 50,800 pounds. This charge should under no circumstances be increased. It is absolutely the maximum charge of this powder. In fact, it is quite a little heavier than I would recommend, and you should use it only in the very best cartridge cases of rifle anneal. If the mean pressure is 50,800 pounds you can be sure that occasionally individual pressures are going as high as 53,000 to 54,000 pounds.

The maximum charge of this Pyro D.R. Lot 540 powder for use with 220 grain bullet is 43 grains weight, giving M.V. 2,200 f.s., with a mean pressure of 49,950 pounds.

If you wish higher velocities than the above you should go to du Pont No. 16 or No. 17½ powders, using the powder charges recommended on the canisters.

In dry climate I would expect Pyro, or other high pressure du Pont powders to remain without deterioration in dirty cartridge cases about one year. There must be some small gradual deterioration almost at the start of loading, but at ordinary ranges I doubt if it will make itself manifest if kept loaded in a living house in Ohio within a year.

With du Pont No. 80 powder I have had some cartridges loaded with powder in dirty cases, keep without appreciable deterioration for six months On the other hand I have had others deteriorate so badly within four days as to give hang fires, miss-fires, and squib loads that seated the bullet several inches up into the bore and made the very devil of a job to get the bullet out. I use du Pont No. 80 powder right along all the time for reduced loads for it is a fine powder, but never ogen will I load it in dirty cases.

again will I load it in dirty cases.

The F.A. No. 70 Govt. Smokeless Primer, or other standard high pressure smokeless primers are fine for use with black powder. I do not think that you will have any trouble at all from their use with black powder in the .45-70 cartridge.

THE RUSSIAN SPORTER

I HAVE a Russian Sporter, handmade pistol grip stock with 21 inch barrel, and I find it most accurate, in fact more accurate than my Krag Sporter. I would like to work up a load for it with the 110 grain .30-06 bullets which Remington is now selling to reloaders. My impression is that I could use a charge of du Pont No. 16 short of compression with this bullet and still keep within safe pressure limits. What charge do you think will give me 3,000 with the 110 bullet using the 21 inch barrel? I have been reading some of the booklets of the du Pont Company and it seems that du Pont No. 15½ would give higher velocities than No. 16. What is your impression in regard to this? The above load, of course, to be used in new case, just purchased from U. S. Cartridge Co. Charges weighted and cartridges loaded with Modern Bond tools. My object is to have bullet speeded up to a point where it would likely in all cases go to pieces upon striking the ground. We have very few places when shots can be taken more than 100 yards and most of my shooting around here is at "chucks." F. E. B., Lakewood, Ohio.

Answered (by Major Whelen). While I have never shot the Russian rifle, and know of no one who has used it with the 110 grain Remington Hi-speed bullet, I feel quite sure that the following powder charges are conservative, and the velocities approximate for 24 inch barrel. Deduct about 100 fs. for your 21 inch barrel. The accuracy will depend upon how well the bullet gets

through the throat of the Russian rifle without being unduely deformed. Also the groove diameter of the Russian barrels runs from .312 inch to .315 inch, while the Remington bullet measures .308 inch.

Forty-nine grains du Pont No. 16 M. V. about 3,000 f.s. Probably a charge of No. 16 that is just short of compression can be used, but start it 49 grains and work up to it a grain at a time, watching the cases for evidence of high pressure 544 grains du Port No. 151/M V. Schoot

54.4 grains du Pont No. 15½ M. V. about 3,000 f.s. Probably this charge can be increased several grains, but go cautiously in increasing it.

THE .45 AUTO

HAVE been shooting the Colt .45 Automatic HAVE been shooting the Colt 45 Automatic "as issued" for the past eight years and like it very much. But as you know the gun is not the best one in the world for target work. I like it well enough to continue to use it in preference to some others. Referring to the October 1, 1924 issue of THE AMERICAN RIFLE-MAN on page 23 I see an article regarding a special gun of this type. This gun according said article was designed purely for target work and has a ten inch barrel. This article goes on to say that one of the companies in the United States or rather I presume said company is in the States, is thinking of making this type of gun and placing it on the market. I would certainly like to have one of them, provided of course the price is not out of my reach. What I would like to know is, do you know of any company making this gun or one thinking of making it? about how much would it cost? If no company is making this gun at present how much would it cost to have one made? Do you know the exact description of the gun referred to in The American Rifleman? We get quite a lot of shooting out in this part of the world both rifle and pistol and also shotgun. I can't seem to learn to shoot one of these guns, although I have qualified as Expert over the regulation course. Still I don't consider that anything when it comes to real pistol shooting. W. H. P., Wapahien, China.

Answer (by Major Hatcher). I have not seen the Colt with 10 inch barrel, referred to in The American Rifleman of October 1st. I can say, however, that I have seen Colt Automatic pistols with barrels of extra length, and the way they were constructed was simply that the barrel was made longer and stuck out of the slide correspondingly further at the front.

To get the full advantage of a 10 inch barrel, it would seem necessary to mount the front sight on the barrel itself. The front sight and its mounting would have to be detachable in order to allow the barrel bushing to be put on in assembling.

The main expense connected with making a weapon of this kind is due to the fact that the present set-up for making barrels in quantities, only permits of rifling a comparatively short length, and it would therefore be necessary to have a special set-up for rifling a 10 inch barrel. If a great quantity were being made, the cost would be insignificant, but to rig up special for one barrel would make the cost very high.

one barrel would make the cost very high.

I would suggest that you write to the Hoffman Arms Co., Cleveland, Ohio, in regard to this matter, as they are prepared to do all kinds of gunsmithing of this nature, and will quote you a price on most any job you want.

I would like to state for your information that the recent Model .45 caliber Colt shows a considerable improvement in accuracy over the guns issued several years ago. The barrels are being made to smaller dimensions, which accounts for part of the accuracy, and the rest is due to better fitting and the improved shape or grip and trigger, as described in The American Riflemans for July 1st.

The accuracy has also been greatly improved by the recent manufacture of Frankford Arsenal cartridges. Recent daily tests show an average mean radius of around .6 inch at 50 yards.

Do You Remember

?

That a majority of the *best* shots at the Eastern Small Bore Championships at Sea Girt, N. J., last year used Remington Palma .22 long rifle cartridges? Moreover, you should remember, and likewise consider in selecting the ammunition you will use this year at Sea Girt, Camp Perry and elsewhere, that most of the big matches were won by shooters who used Remington Palma Cartridges. Look these over before you decide.

Last Year's Sea Girt Records

Preliminary Palma

 H. J. Wood, Bridgeport, Conn. Score 225, 30 V's (A new record)

Palma Individual Match

 H. J. Wood, Bridgeport, Conn. Score 223

Eastern Two Man Team Match

 Capt. G. L. Wotkyns, U. S. A. Springfield, Mass.
 R. H. McGarity, Wash., D. C. Score 592 (A new record)

Eastern Small Bore Team Match

National Capital Rifle Club*
 Washington, D. C.
 Score 973
 One half of team shot Palma.

Eastern Small Bore

Championship

1. L. T. Everett, Mahwah, N. J. Score 246

Individual Grand Aggregate

- 1. J. W. Hession, Dobbs Ferry, N. Y. Score 564 (A new record)
- 2. L. T. Everett, Mahwah, N. J. Score 564 (A new record)

200-Yard Re-Entry

1, Captain R. L. Bowlin, U. S. A. Score 150, 26 V's

100-Yard Re-Entry

1. R. H. McGarity, Wash., D. C. Score 982

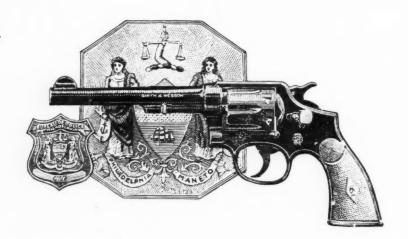


REMINGTON PALMA

THE ACCURACY CARTRIDGE







SMITH & WESSON SUPERIORITIES

- A double strength alloy steel heat treated cylinder—an overloaded cartridge cannot harm it or you.
- 2 A double "locked-in-line" cylinder which cannot fly open, no matter what the load.
- 3 The kind of sights that make accuracy easy—easily seen under any shooting conditions.
- 4 A hammer that cannot strike the primer until trigger is pulled.
- 5 Holds principal target records.



SMITH & WESSON

Manufacturers of Superior Revolvers

SPRINGFIELD MASSACHUSETTS

Western Representative:

Andrew Carrigan Company, Rialto Bldg., San Francisco, Cal. — Los Angeles, Cal., Seattle, Wash. The right sight for this new

No. 48-W

MICROMETER Receiver Sight for the new Winchester Bolt Action Rifles Model 54 .270 Caliber

An adaptation of the famous Lyman No. 48 sight for Springfield 1903 rifles and the No.

48-C sights that are standard equipment on the Springfield Model 1922 .22 caliber.

Sight has "click" adjustments vertically and later-ally. Each "click" changes point of impact approximately 1/2" at 100 yards. The receivers of the Win-

chester Model 54 are all tapped and drilled to take this No. 48-W Sight, so that anyone can attach it in a few minutes with a screwdriver and a pocket knife.

Get the gun fully equipped or ask your dealer to show you the No. 48-W Sight—regularly priced at \$11.00, with disc \$11.50. (Disc desirable on long shots.)

For complete catalog showing other sights for Win-chester Model 54 caliber .270 and all rifles, send 10c. Free folder on request.

Lyman Gun Sight Corp. 90 West St. Middlefield, Conn.

Use LYMAN SIGHTS

The World's Daintiest Fastest-Handling He-Gun

Hunters, you know that regular sporting Springfield rifles are too heavy and clumsy in stock and barrel for most successful woods use. They swing so slow they make you fail in many snap shots. They are burdensome to carry because of weight and wrong balance.

BUT the Springfield rifle with light stock and special barrel makes one of the fastest-handling and easiest carried sporting rifles known.

The wonderful accuracy and superb power of the .30-1906 cartridge is not impaired, when construction of the light gun is

We make these short, light rifles, with barrels short and slim or short and thick, with straight taper or otherwise as desired. Let us make you a gun to suit your special fancies and woods conditions. Remember, Niedner fine barrels and stocks are reasonably priced.

NIEDNER RIFLE CORPORATION

Dowagiac, Michigan

EVIDENCE

In 1912 I discarded a very accurate Springfield sporting rifle, because it was too slow, heavy and clumsy in the woods. It took twelve years' time and five other rifles to swing me back to the Springfield again, but I am back, most emphatically. I have a Springfield with a hand made stock and a special 20-inch barrel. It is what I have dreamed of for years. The cut-down military rifle is always too weighty, but this little arm of mine is the world's daintiest, fastest-handling he-gun, without any question.

S. E. Willaims, Fleming, Pa.

Among Those Present

Shooters, always tell manufacturers and dealers you saw their goods mentioned in The American RIFLEMAN. When you write and when you meet them, make it plain you saw something about the merchandise in our text or in the advertisements.

You will help make this "Shooters' Bible" still more authoritative by doing so.

We have a theory we want to prove.

We think no outdoor merchandise gets mentioned in these columns until it reaches a certain practical excellence-until it richly deserves mention and has earned popularity. When its name is seen here, we all feel that any article has "arrived," but until then shooters may have their doubts.

Upwards of a hundred thousand shooter-readers look to this magazine as a buying guide. They have confidence in and buy freely of products brought before them in the magazine. If they fail to find any name here, they have a hunch there is some good reason. Perhaps the product is not suited for the active outdoor person.

Guns or gloves, auto tires, tobacco or tents, scope sights, sweaters or shoes, or no matter what similar outdoor merchandise it may be, our hundred thousand will think more of it and buy more if they know it has "made" THE AMERICAN RIFLEMAN.

Show advertisers what you think of this magazine. Never miss a chance to tell them you saw their products mentioned in these columns.

The AMERICAN RIFLEMAN

B. & M. Shooter's Supplies

Perhaps B. & M. is your best source of all shooting accessories. If you cannot get what you want, write us. If we do not make it we will obtain it for you reasonably, or we may be able to ship it from stock on hand.

Jacketed Bullets of All Latest Types. Primers

New Empty Cases

Ammunition for High-Grade Foreign Rifles.

Hunting Equipment of All Kinds.

Rifle Sights.
Rifle Cases, Slings, Accessories.

Sighting Scopes. Guns

The B. & M. Line now manufactured consists of De Luxe Cleaning Rod Outfits, Telescope Sights and Mounts, and Loading Tools. All other similar products are older, and none are so desirable or serve their purposes so well.

Write for what you want.

Belding & Mull, Philipsburg, Penna.

"You have the best light-weight bag on the market."—Dr. C. P. Fordyce.

FIALA PATENT SLEEPING BAG

Scientifically Correct

No dead air space to absorb moisture and odors. Every part can be sunned or washed. Weighs but 5 lbs.; warm as 30 lbs. of blankets. No hooks, strings or crude contraptions.

Write for circulars and prices.

Finia High-Grade .22 Caliber Combination Rifle and Pistol, with 3 Barrels. A \$30 \$18 Rifle at

MIRAKEL 5x Prism Binoculars Genuine Jena; wt. 5 oz.; with case...

Camp, Touring or Expedition Equipment Let us furnish estimates

We have recently outfitted 8 Exploring and Engineering Expeditions — Also the Roosevelt party.







Loading Tools 410 Brass Shot Shells. Also Pistol, Revolver and Rifle Cartridges. Hand Book and Catalog, 10 Cents MODERN-BOND CORP.

813 West 5th Street, Wilmington, Del.

An Outstanding Contribution for the Student of Firearms History

THE KENTUCKY RIFLE

By I. G. W. DILLIN

Now Ready for Distribution!

Of co-ordinate interest to firearms collector or marksman, this volume of 130 pages of text and 126 full page plates, is an exhaustive, authoritative and complete chronicle, against a background of pioneer America, of the birth and development of the weapon which in the days of the Georges won a nation for a prize.



Chapters on materials used: the forging and rifling of Barrels; on Powders, Bullets, Velocities and Penetration; Powder Horns; the Identification of Specimens, including the only check-list of makers that has ever been compiled; on how to detect forgeries and spurious specimens and on reconditioning old weapons.

PRICE \$10.00 - with a discount of 20% to NRA Members

BOOK DEPARTMENT

The AMERICAN RIFLEMAN

1108 Woodward Bldg.

Washington, D. C.



Amateur Gunsmithing

By Major Townsend Whelen

Usually gunsmithing work has been considered beyond the skill of the great majority, and hardly a subject for home treatment. But after watching a number of gunsmiths at work remodelling and repairing rifles and shotguns, Major Whelen came to the conclusion that their craft was not a gift from the gods, nor one requiring long apprenticeship, but well within the capabilities of anyone willing to take a little pains. He therefore determined to attempt remodelling and repairing a few weapons just to see if he could do it, and he found that he could. With no previous skill, and with only the ordinary knowledge of rough carpentering that most men have, he was able to do the work successfully in a little 6 x 8 workshop, with an extemporized bench, and a very small and most ordinary equipment of tools. The work he turned out took lots of time, but it was interesting, and the results were really excellent and comparable with that turned out by our very best professionals. What he is passing on in this work is therefore based on experience, hence is both practical and possible. "Amateur Gunsmithing" is the only work of its kind in existence, the only information available anywhere on this subject.

There are chapters on the Gunsmithing Art, Stocking, Checking, Polishing Stocks, Chambering, Bluing and Browning, Sight Fitting. Trigger Pulls and their Adjustment, Shotgun Repairs, Revolvers and Pistols, Rifle Bores, Lapping Rifle Barrels, Field Repairs.

There are also valuable appendices on Removal of Metal Fouling, Making a Sulphur Cast, Dismounting Krag Action, Dismounting Mauser Action, Dismounting Mannlicher-Schoenauer Action, Dismounting Other Actions, Barrel Dimensions, Handy Tables, American and English Directories of the Gun and Rifle Trade, etc.

Even if a Rifleman, or Sportsman, does not contemplate gunsmithing work he cannot afford to be without this book as it tells him a great many useful matters not contained elsewhere on how to keep his weapons in adjustment and repair, and how to make field repairs in case he meets with an accident many miles from a machinist.

Price \$1.50 to members of the National Rifle Association, \$2.00 to non-members. Postpaid.

FOR SALE BY

The AMERICAN RIFLEMAN

1108 Woodward Building, Washington, D. C.

The B. S. A. Match Rifle No. 12

Made and guaranteed by the Birmingham Small Arms Co., Ltd., proves its value most convincingly in competition. Used by marksmen the world over.

Send for detailed descriptive literature on B. S. A. March Rifles, Air Rifles, Shotguns, Scientific Cleaners, Firearms Accessories, etc.

3

JONAS B. OGLAEND, INC.

U.S.A. DISTRIBUTORS

Dept. 19 15 Monroe Street

New York

Canadian Representatives: Fraser Co., 286 St. James St., Montreal, Canada



Patent applied for

RIFLEPAL

The new cleaning rod for rifles. Together and folded in a few seconds. No threads used. All brass. Simple, quick, reliable. Fitting cal. 7 mm. 30 and up. With brush and holder, \$1.30. Ask for folder or send money order.

Riflepal Manufacturing Company

245 Canal St., New York City

OVR Shotgun Trap and Field



Moderate Prices

Send for Catalog

BAKER & KIMBALL

36 South Street Boston, Mass.

Sole American Agents

Iun

.22 Lin

Mei five Con

con cas Ma

rou

sive TH Wo

Mod oct: wan kar

issu

Ma

Hota b

Col Noi Pis in S. F con 4 in sto .38 dit 4 i bar San Phi

GU 54t

gui DI

the RIG you figl

ye YO Sho cor 53, On tak peo .30 use Sta

Do Animals Obey the Laws of Moses?



THE TEN COMMANDMENTS IN THE ANIMAL WORLD

A truly amazing disclosure! These remarkable observations come straight from the notebooks of this great pioneer naturalist and woodsman. A handsome volume, richly bound in dark green cloth and stamped in gold. Only a few introductory copies will be sold at this special price.

Mail This Coupon Now

Special Introductory Offer

ONLY

Doubleday, Page & Co.. Dept. T.C. 1126 Garden City, N. Y.

While They claim the Animal World," by Ernest the Animal World," by Ernest Thompson Seton. If remittance of one dollar is not enclosed herewith you may send me book C.O.D., plus a few cents postage.

Age .																	
Name	*						*					*					
Address																	
Tity																	

IMPROVED BULLETS

Non-fouling-copper-cased Spitzer, unexcelled accuracy and shocking power. Send for descriptive circular.

WESTERN TOOL AND COPPER WORKS Station G, Box 57, OAKLAND, CAL.

The O'Hare Micrometer



All of the Service Teams are equipped and the State Rifle Teams and hundreds of Rifle Clubs. The use of this micrometer adds many points to your score.

Price \$5.00

Conroy Shooting Bag

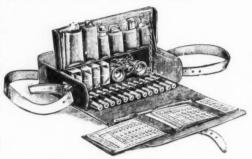
Unquestionably one of the most popular among the rifle shots. Compact and easiest to carry. Made of heavy russet color leather and with sole leather shoulder sling strap. The sides are reinforced preventing bulging outward.

This price does not include the articles shown.

Size 12 x 9½ x 3½

Price \$10.00

Send for Latest Illustrated Catalog and Price Lists



P. J. O'HARE, IMPORTER AND DEALER

Riflemen's Accessories

178 LITTLETON AVE., NEWARK, NEW JERSEY

Binoculars to Slip Into a Pocket



TRAVEL 8x "DIALYT"

Weight 121/2 02.

For Hunting, Rifle Matches,

Camping, Touring, Yachting

and all Sporting Events.

Light in weight, easy to carry, convenient to handle. graceful in appearance, yet possessing the foremost optical qualities—or a larger size with the same general characteristics. These are the kind of glasses you want to own—glasses that will not only give you unexcelled service, but be a source of continual pride.

Hensoldt "DIALYT" Roof-Prism Binoculars meet these requirements as no other glasses can. They are radically different and so constructed as to combine all essential qualities of a fine Binocular. Complete range of magnification from 3½ to 18 power. These facts explain why they have been selected by those who are really in a position to judge the true merits of a glass.

Dr. Hugo Eckener, Commander of the new U.S.N. Zeppelin Airship ZR-3, now known as the "Los Angeles," depended upon a "DIALLYT" when plloting the huge dirigible across the Atlantic.

The N. Y. Police Department have selected the "DIALYT" for their Police Boats after testing out the most prominent makes. "DIALYT" glasses are a constant joy and pleasure to the thousands who are using them.

PROTECT YOURSELF: Every Hensoldt Binocular has a Guarantee Certificate—do not buy without it!

Ask your Dealer to show these wonderful glasses, or write us for Catalog Λ

Al. Hensoldt & Sons 2 Stone St. New York

0. 1

The Arms Ches TERMS

THE uniformly excellent returns from advertisements appearing in the classified columns of THE AMERICAN RIFLEMAN make it a most satisfactory and productive medium for the disposal of surplus shooting equipment, or the acquisition of special types of firearms. Free Insertions. Each subscriber is entitled to one insertion of one-half inch, when his subscription is paid for one year. It is necessary only to write or print the text plainly, noting thereon the date subscription was paid. These advertisements will appear in the first available issue and should be in publication office two weeks prior to the following publication date.

Paid Insertions. Non-subscribers or those who have already made use of the subscriber's privilege may take advantage of these columns at a cost of \$1.00 per inch or part thereof. No advertisement for less than \$1.00 accepted. Advertisements will be set in 6 point solid. They should be in the publication officer two weeks prior to the time appearance is desired.



WANTED—S. &. W. .45, Model 1917 Revolver. .22 Single Shot Target Pistol. D. H. Ryan, 442 Linden St., Memphis, Tennessee.

WANTED—Heavy barreled Springfield, complete, or without stock, Arthur W. Baker, 450 Colvin Parkway, Buffalo, N. Y.

MAKE YOUR old guns like new with New Method Gun Bluer, large size can, enough for five guns postpaid for \$1.00. New Method Gun Company, Dept Z-4, Bradford, Pa.

FOR SALE—S. & W. .44 Russian, target, new condition. Colt .32-20, .38, .45. Low prices for cash. Holden, 166 North St., Northampton, Massachusetts.

We have fought the fanatics to draw this round. Let us prepare for an intelligent offensive NOW. Ship your stamp and SHIFT WITH THE HOUSE OF SHIFF the GUNMAN. North Woodstock, New Hampshire.

FOR SALE—Brand new in factory grease, Model 1892 Winchester rifles, caliber .25 to .44, octagon barrels. A gift at \$18.00 each. Edward A. McGoldrick, W. 522 Park Place, Spotens Washington. ward A. McGoldrickane. Washington.

WANTED—.30-'06 Sporter Springfield, as issued by D. C. M. Must be in perfect condition. State price and whether willing to ship C. O. D. Stanley J. Weatherley, Herb Lake, Manitoba, Canada.

FOR SALE—I have 34 shares of Griffin & Howe, Inc., stock which I want to dispose of at a bargain, par value \$100.00 per share. I will take \$2500.00. This was my interest in the Company. James V. Howe, 1765 E. 27th St., Cleveland, Ohio.

WANTED — Patterson, Dragoon and Bisley Colts. Kentucky Flint rifles. North Berlin, North and Chaney, Richmond and Harpers Ferry Pistols. Wesson 1855 .22 cal. revolvers. Specify in detail, cals., length of barrels and condition. S. H. Croft, 33rd & Market St., Phila, Pa.

FOR SALE—Colt .38, blue, 6-inch barrel, new condition. \$20.00. S. & W. .32, blue, never shot, 4 inch barrel, \$20.00. S. & W. .38, nickel, pearl stock, 6 in. bbl., new condition, \$23.50. S. & W. .38 nickel, square butt, 6 inch barrel new condition, \$24.00. Colt .32, blue, new condition, 4 inch barrel, \$19.50. S. & W., blue, 4 inch barrel, new condition, bluing worn, \$18.00. Samuel Kates, S. W. Cor. 20th & South St., Philadelphia, Pa.

SHIFT WITH THE HOUSE OF SHIFF, THE GUNMAN, N. Woodstock, N. H. This is our 54th year, and best. I have never shipped agun I did not personally back EXCEPT NEW, DIRECT to your order. I never carry because they are cheap but only because they are RIGHT. One charge. One price to ALL. If you have not shipped your stamp, if you are not guns as you do a drink THEN SHIFF'S NEW YEAR'S MESSAGE to YOU is that is serves YOU WELL AND RIGHT.

FOR SALE—One Stevens double hammerless shotgun, 335 grade, 12 gauge, 28 in. barrel, new condition, \$20.00. One Winchester rifle, Model 53, .32-20 caliber, new gun, never used, \$27.00. One Winchester rifle, Model 92, .38-40 caliber, takedown, half magazine, round barrel, Marble peep sights, new gun, never used, \$40.00. One .30 caliber Luger pistol, two magazines, slightly used, fine condition, 4 in. barrel, \$15.00. One Stainer violin, 100 years old, good shape, and good toned instrument, will sell for \$40. J. K. Sheerer, Mattawana, Pa.

FOR SALE—New and slightly used Graflex, Kodaks, lenses, binoculars, telescopes, Zeiss, Goerz, Hensoldt, Busch, reasonably priced, good frearms taken in trade. National Camera Ex-change, 29 S. 5th St., Minneapolis, Minn.

WANTED—One or two Models of 1875 Winchesters .22 caliber repeaters. Action must be good. Wire or write. Clarence A. Marsh, Box 1093, Orlando, Florida.

FOR TRADE—One .45 D. A. M. C. Model, inch barrel, only fired 6 times, for automatics shotgun. W. R. Martin, Loraine, Texas. 2

ANNOUNCING -

A Service for Firearms Collectors

Kendrick Scofield whose writing on firearms have also appeared during the past ten years under the pen names of "Stephen Trask" and "David North" and who edited "The Kentucky Rifle," has resigned from the staff of The American Rifleman to engage in the purchase and sale of antiques. Among his activities will be a new service for firearms collec-

The many inquiries received by The American Rifleman concerning weapons of the past gives strong evidence that there is a wide field for a service which will embrace appraisals, the fulfilling of commissions for special specimens, the identification of weapons of obscure origin, and kindred services difficult heretofore to obtain.

Mr. Scofield will also prepare special manuscripts on firearms, descriptive catalogs of collections and other editorial work connected with firearm anthology.

KENDRICK SCOFIELD

3296 M Street

Georgetown, D. C.

FOR SALE—Winchester auto shotgun, model 11 standard, and canvas case. Perfect condition, shot about 50 times, \$40.00. E. W. Trelawny, 9430 222nd St., Queens Village, N. Y.

FOR SALE—.45 Colt Auto., extra magazine and holster, \$25.00. Blue rock trap, good, \$4.50. Ideal .38 S. & W. loading tool, good, \$2.75. Stevens No. 10 pistol, fine, \$9.00. Miles O. Noll, Lewisburg, Pa.

FOR SALE—.32-20 Remington Carbine, Model 25, perfect, \$25.00. Model 24 Remington .22 L. R. Autoloading rifle, brand new and perfect, \$24.00. Registered Airedale pups, whelped April 23rd, females, \$12.50, males \$15.00 at two months. W. M. Gantt, Box 30, Steppville, Alabama.

COLT NEW SERVICE TARGET REVOLVER .45, 7½ inch. new, never fired, \$42.50. Trade for new model Springfield Sporter as issued. J. I. Davis, 4522 Forbes, St., Pittsburgh, Pa. 5

FOR SALE—1922 .22 Springfield. Very fine, accurate. \$30.00. Special Match .22 Pistol Express, rifling B. S. A., action perfect, \$25.00. C. R. Anderson, Box 348, Mason City, Iowa. 9

FOR SALE—Model 19, .22 Savage N. R. Match Rifle, Lyman receiver sight No. 42. solutely perfect inside and outside. \$19.00. E. Austera, 240 E. 71st St., New York City.

FOR SALE—S. A. Army .45 callber, 5½ inch barrel, new, \$29,00, or will trade for New Ser-vice 5½ inch .45 new. E. E. Kimmell, 220 Ash-dale St., Philadelphia, Pa.

FOR SALE—One Marlin pump shotgun, 20 gauge, good shape, \$20.00. One diamond ring, perfect, weighs four and sixty three one-hundredths, in white gold, man's mounting, bargain at \$1950.00 cash. A. E. Pellerin, 114 W. Main St., Denison, Texas.

FOR SALE—Model 10-E Remington pump gun, one 30 inch barrel, one 26 inch, perfect condition. Cost \$305.00. WANT—High class rifies. One Marlin .32 Special Model No. 93 c. s., sporting carbine, never fired. \$28.00. Adam C. Pesavento, 82 S. Washington St., Wilkes-Barre, Pa.

FOR SALE—Winchester A-5 Scope, rebuilt by Fecker who fitted special sleeve holding cross-hairs and 10X eyepiece which can be removed, leaving 5x. Complete with micrometer mounts. barrel blocks and screws for Winchester 52. Perfect except finish worn some. Price \$25.00, f. o. b. An ideal target outfit. Lamont O'Harra. RFD 6, New Castle, Ind.

FOR SALE—Large Assortment of Reloading Tools and Moulds of Various Calibers 25-50. Obsolete rim and center fire cartridges. Civil War Carbines. Different makes and caliber rifles and shotguns and revolvers, domestic and foreign. State in first letter what you desire. Satisfaction and prices guaranteed. John A. Folwartshny, 232 Federal St., Portland, Me. 8

FOR SALE—Savage .22 N. R. A. \$18.00. Savage Model. 20 Bolt Action .250-3000, Receiver Sight, \$45.00. Savage 99 G, lever action .250-3000, Lyman 30½ rear, Ivory bead, front sight, \$40.00. Above in good condition. .22 Colt Automatic Pistol, new. Gold bead sight, \$28.00. Altographic Kodak, good, \$15.00. WANTED—Ithaca 5E, Smith 20 Double or similar guns, 7 mm. American dame Sporter, Hensold Dialyt, 8 or 10 power Binoculars. A. R. Pryor. 1044 S. 42d St., Birmingham, Alabama.

FOR SALE—No trades. Colt S. A. Frontier, caliber .44-40, 5½ bbl. gold bead front sight, Ivory grips, extra checked walnut and rubber grips, 3½ pound pull. Extra trigger and hammer for 5 pound pull. New Heiser Knapp pattern hand carved holster. Gun targeted by Fltzgerald of Colt. Gun is perfect and a prize. Price \$40.00 complete. Also Ideal .44-40 combot and mould, perfect, \$1.50. 400 primed cases. 44-40, \$5.00. 2.000 primers for above \$5.00 or complete outfit as above \$5.00 or Savage 12 ga. 30 inch full pump, just overhauled at factory and perfect, \$30.00. Vlon 40 power spotting scope (no case) brand new. Will show .25 caliber holes at 200 yards, \$18.00. Marlin 39 .22 lever action, new. Lyman peep rear, folding leaf and Globe front. Drilled for Winchester Scope blocks, fancy stock, perfect inside and out, \$20.00. Brown & Sharpe one inch Micrometer ratchet stop, new, \$4.50. All above guaranteed as described. Draft or P. O. only. L. H. Wohlenberg, Care Iowa State Savings Bank, Lyons, Iowa.

FOR SALE—22 caliber 7 shot Iver Johnson Model 1900 target revolver, 9½ inch oct. barrel, blue finish, like new, \$3.00. .32 caliber rim-fire 5 shot H. & R. target revolver, 6 inch barrel, like new, \$7.50. Ideal No. 3 D. A. tool. .42 Hi-bower Savage \$4.00. Old Model Winchester tool, .45-70-500, single adj. chamber. Adapted for both Berdan and standard primers, \$2.50. dealiber .45 Auto. resizing dies, \$1.00 each. 7 caliber .45 Colt resizing dies, 50 cents each. 9 caliber .45 Colt resizing dies, 50 cents each. 9 caliber .45 Colt resizing dies, 55 cents each. One .38 Colt and one .41 Colt resizing die, 75 cents each. 5 caliber .30 Krag or Springfield neck resizing dies, 60 cents each. Winchester mould 44 S. & W. Russian, fine \$1.60. 1deal Mould No. 228367.53 grains, fine, \$1.60. 2 Winchester moulds .45-70-500 grains, \$1.25 each. One Winchester moulds .45-70-500 grains, \$1.25. each. About 70 empty cases, caliber .38-55 Ballard, new. Quite a few Ideal "Everlasting" cases in the lot, \$1.40. 2 rim-fire breech blocks for 50 Remington Navy Pistols, \$1.00 each. 50 Remington Navy Pistols, \$0.00 condition, bore perfect, \$12.00. 44 Starr C. & B. revolver, like new \$10.00. 44 Remington C. & B. 8 revolver, like new \$10.00. A4 Remington C. & B. 8 revolver, like new \$10.00. A4 Remington C. & B. 8 revolver, like new \$10.00. A4 Remington C. & B. 8 revolver, like new \$10.00. A4 Remington C. & B. 8 revolver, like new \$1.20. Collection of 200 different ancient and modern cartridges, \$1.25. Leather holster, 44 Remington C. & B. 8 revolver

FOR SALE—44 S. & W. Special, prewar, concealed ejector rod. Inside perfect. Outside bluing holster worn, \$28.00. Krag carbine, as issued, \$10.00 or trade for .22 rifle or pistol with barrel and action perfect. WANT—following handguns, must be in perfect shape and reasonable price: .32 Colt Pocket Positive, .38 Colt Police Positive Special, .32 and .33 Regulation Police S. & W. WILL TRADE—S. & W. and Colt revolvers for Hensoldt or Zeiss Binoculars. J. F. Gallowoy, 102 S. Sixth st., Duquesne, Pa. 22

FOR SALE—Busch-Sollux, 6x31.5 Prism Binocular. Cost \$68.00—for \$40.00. Also 12X, one for \$40.00. New: Carl Ziess 3X Prism Glass. Cost \$50.60, for \$30.00. Graphic camera No. 0. Cost \$48.00, for \$24.00 f 6.3 lens. Ica Palmos Camera 6½x9 C.M. Ziess f. 4.5 lens, focal plane shutter, 3 double holders and adapter. Cost \$136.50—for \$70.00. Planhil V. P. Camera f. 4.2 Lens. Compur shutter, cost \$77.50—for \$35.00. C. D. MacMillan, Hines, Maywood P. O., Illinois.

FOR SALE—.250-3000 rifle, by Niedner, barrel and stock by Niedner, barrel 24 inches, built on brand new Savage 1920 bolt action with Lyman No. 54 peep rear sight. Perfect brand new, just received from factory, cost \$130.00—sell for \$100.00. Brand new barrel and complete stock also brand new for Savage 1920 .250-3000, both for \$18.00 cash. Taken from action used in above rifle. Geo. A. Goeke, 15 E. Main St., Waukon, Iowa.

FOR SALE—One case of 1200 caliber .30'06 cartridges, £14.00. One Winchester musket calber .22 long rifle, fine condition, £15.00. Chas. Richmond, Jr., 10 Williams St., Bradford, Pa. 26

FOR SALE—Vion 33 power spotting scope, 2 inch objective, new condition, except slight scratch on one tube, \$25.00. J. W. Fleming, Hartington Nebraska.

FOR SALE—380 Colt Auto., \$15.00. .45 Colt S. A. rubber stocks, \$16.50. .6X. "Marchand." signal service glasses. \$10.00. C. A. Nestal, Albion. N. Y.

FOR SALE—.30-30 T. D. Winchester Model 94. Also Colt Bisley .38-40, 7½ inch. Both in fine condition. Reasonable. Walter C. Heisler, Jewett, Ohio.

WANTED—Springfield bolt and receiver. Springfield in good condition or complete rifle. Condition of barrel no object. W. J. Huston, 3848 Agua Vista St., Oakland, Calif. 37

FOR SALE—.256 Original Newton, fine shape, 100 new empties, 2 bullet moulds, Ideal loading tool. Ideal Powder Measure, outfit for \$45.00 A. W. Moulster, Brainerd, Minnesota.

WANTED—Krag Sporter, 24 inch barrel, pistol grip stock, checkered, sling swivels, Lyman 34 Sight. Must be in good shape. Price reasonable. Chas. Hoffmeister, Imperial, Nebr. 32

FOR SALE—Haenel Mannlicher 8 mm. Rifle Double trigger top rib, pistol grip, good second hand condition. Bargain at \$20.00 Box 393, Vinalhaven, Maine.

FOR SALE—L. C. Smith, Specialty grade, 12 gauge .32 perfect condition. This gun scored 98x100 by F. D. Kelsey, \$70.00. New Service target .44-40 and an interchangeable cylinder for .44 Russian. Perfect condition. \$40.00 M. H. Heim, 403 14th St., Buffalo, N. Y. 20

FOR SALE—Ithaca 4-E, 34 inch, good condition, \$62.00. Ziess 8 x 40 Delectir Binocular, cost \$97.00 new condition, sell for \$62.00. Springfield bolt and receiver, new, large number, \$9.00. Winchester A-5 telescope without mounts, \$16.00. No trades. J. A. Wade, Box 493, Sheridan, Wyoming.

WANTED TO BUY FOR CASH—A light weight Charles Daly three barreled hammer-less gun, prewar made. 12, 16, or 20 gauge. Must be full choke or full and modified, 30-30 with automatic top safety and elevating rear peep sight. Send full description and price to E. A. Weatherbee, Lincoln, Maine.

FOR SALE—.45 caliber auto. pistol, inside perfect, outside a trifle holster worn, belt, holster and four extra clips, all for \$22.00. One .30 caliber Ideal bullet mould No. 308334.30 U. S. G. One.303 Savage or .30.40 short range mould No. 30810 for \$1.00 each. M. M. Clarabut, 733 N. James St., Rome, N. Y.

FOR SALE—New 25-20 Remington Pump carbine, Lyman peep, \$20.00. New Winchester Model 90, Lyman peep, Ivory front, Maxim Silencer, \$22.00. Prewar 30 Luger, grip safety, about 5 inch barrel, new condition, \$20.00. Oliver typewriter visible and good condition, \$9.50. A. E. Levriett, Box 3342, Station F, Jacksonville, Florida.

FOR SALE—One B. S. A. 22 L. R., brand new, \$30.00. 20 gauge single shot, shotgun, Winchester. Brand new, nickel steel barrel, \$25.00. Winchester Model 73, 44 caliber fancy stock and forearm. Perfect and just like new, \$25.00. Krag Carbine, fair condition, \$10.00. 25-35 Winchester carbine, Lyman sights, brand new, \$30.00, bargain. Small spotting scope, 18 power, \$5.00. Fancy Scheutzen stock, butt plate, and double set triggers, to fit Winchester falling block action, bargain, \$14.00, new. Samuel M. Milman, 565 Crown St., Brooklyn, N. Y.

Milman, 565 Crown St., Brooklyn, N. Y. 33

FOR SALE—Fine Sporting Springfield, special Winchester 24 inch barrel, gold bead front sight, Lyman No. 103 micrometer rear sight with folding leaf mounted on special band, full pistol grip stock, grip and foreend checked, recoil pad, a very fine sporter and one that would be a pleasure to own. This gun is brand new, been fired just enough to line sights, gun sost over \$125.00—will sell for \$85.00 cash. One special built Savage, 25-35, 24 inch octagon barrel, beautiful selected stock with shotgun butt, grip and foreend beautifully checkered. Lyman combination front sight, Lyman No. 1A rear peep, gun is new and a wonderful shooter. Cost \$90.00—sell for \$50.00 cash. One 23000 Savage bolt action, been shot very little and barrel as perfect as new, outside shows some wear from being carried in scabbard, gold bead front, King folding leaf middle and Lyman No. 54 windgauge rear sight, cost \$62.00, sell for \$40.00 cash. Chas. A. Evans, Box 190, Sheridan, Wyoming.

FOR SALE—Remington Auto. Rifle, callber .35. Sheard gold front. Marble flexible rear sights. Inside fine and only few scratches outside, \$45.00. Colt Auto. .38 callber, with hammer, good used condition. \$18.00. Colt Auto. .45 callber Government Model 1911, good, used. \$17.00. Colt Officer's Model Target, callber .38 S. & W. Special, checkered trigger and back stop. adjustable sights. Good used condition. \$30.00. Colt Single Action, Frontier, blued, 7½ inch barrel, caliber .32-20, holster worn, otherwise fine. \$22.00. Colt single action, Frontier, blued, 7½ inch barrel, callber .44 Russian, some bluing rubbed off barrel, otherwise fine. \$20.00. S. & W. Special blued callber .38 special, swing out cylinder, 5 inch barrel, set of ivory grips. Fine condition, \$30.00. S. & W. revolver, callber .22 blued, 6 shot, square butt, walnut grip, swing out cylinder, adjustable rear sight, new condition, \$25.00. Box 28, "The AMERICAN RIFLEMAN."

FOR SALE—The following Mauser rifles. These are in about new condition, none having been fired over twenty times. 8 mm. 22 inch barrel, 7½ pounds, \$24.00. .30-06 22 inch barrel, 7½ pounds, \$27.00. 8mm. 23 inch barrel, 7 pounds adjustable sights, \$31.00. .30-06 22 inch barrel, 8 pounds with scope, 4 power Kerner scope, cheek piece, \$42.00. Also one each: 8 power 25 ligne LeFils \$20.00 (new). 8 power Busch \$30.00 (new). 8 power Gertz \$40.00 (new). Albertson, Lewes, Deleware.

FOR SALE—S. & W. .38 Special, 4 inch barrel, latest type semi-patridge sights. Has not been carried. Fired only six times. Factory condition, \$20.00. .38 S. & W. Hammerless. 3½ inches. blued, new condition, \$16.00. Iver Johnson Safety Hammer Revolver, 3 inches, blued, new condition, \$4.50. Bausch & Lomb Einoculars, 6 power, fine new condition, including leather case with compass on top, \$19.00. Hugh O. McKnight, Box 26, Houston, Pa. 38

FOR SALE—250-300 bolt action rifle with double adjustable tool, muzzle sizer and bullet sizer, mould, and 200 gas checks, and 100 soft point factory bullets and two boxes factory soft point cartridges. A fine outfit for \$40.00, Dr. Lincoln Riley, Wisner, Nebraska.

WANTED—Reising or Colt ,22 Automatic Remington, Model 24. .22 S. & W. or Colt .22 Target. FOR SALE—351 Winchester, .22 Winchester Automatic, .45 Colt Army, .38 S. & W. .32-20 Remington Slide Action. Stuart Keneiff, R. No. 5, Mt, Carmel, Illinois. 39

FOR SALE—New Busch spotting telescope, closed 11 inches long, open 42 inches 44-x, 2 7-8 inch lens, will spot .22's in good light 300 yards, .30's at 500 yards. First check for \$50.00 takes it. W. Branis, 131½ Clinton St., Johnstown, Pa.

TRADE—Colt New Service, 5½ inches. Caliber .44 S. & W. Special New. WANTED—Colt S. A. Army or Bisley Model in .45 or .38-40 or .45 Government Auto. O. G. Hovatter, St. George, W. Va.

WANTED—A double barrelled muzzle loading rifle, percussion, "Lewis" preferred. Must be in good condition. Please send complete description and price to C. C. Rupert, 1029 Fifth St., Oakmont, Pa. All letters answered.

FOR SALE—B. S. A. .22 target rifle, complete with case, new, \$30.00. Reason for selling—no rifle club here. Genuine bargain. A. Scott, 150 Manistique Ave., Detroit, Michigan. 50

TRADE—.22 W. R. F. 1890 new, special stock for .45 C. A. P. or S. A., scope, big Mauser action, Springfield, WANT—Sharps .45-120, M. NELSON, 756 Grand N., Portland, Ore. 47

FOR SALE—One Howe-Whelen Bolt Sleeve Adjustable Sight for 1903 Springfield, brand new, price \$20.00. Address Box "F", Calhoun. Georgia.

FOR SALE—Crossman Air Rifle, Factory condition, 1,000 pellets, \$8.00. Edwin E. Farr, Wadsworth, Ohio.

Subscription to the American Rifleman

Enclosed find \$ for my subscription to "The American Rifleman," beginning with the issue.

Name Address

City State

Subscription \$2.00 per year to individual members of the N. R. A; or its affiliated clubs; \$3.00 per year to others.

